

**Final Environmental Assessment  
for  
Satellite Alert Facility  
at  
Cape Canaveral Air Force Station**



**Prepared for:**

**45 CES/CEV**

**Cape Canaveral Air Force Station, Florida**

**September 2005**

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## **Finding of No Significant Impact**

### **Satellite Alert Facility Cape Canaveral Air Force Station, Florida September 28, 2005**

Pursuant to the Council on Environmental Quality regulations, the provisions of the *National Environmental Policy Act (NEPA)* of 1969 (40 Code of Federal Regulations [CFR] Parts 1500-1508), *Environmental Impact Analysis Process* (32 CFR Part 989), and the Department of Defense Directive 6050.1, *Environmental Effects in the United States of Department of Defense Actions*, the United States Air Force conducted an Environmental Assessment of the potential environmental consequences and benefits of constructing a new satellite alert (storage) facility. The purpose of the satellite alert facility is the protection of millions of dollars worth of satellites, particularly during hurricanes.

At present and in the past, the response to a hurricane has been to store and protect the satellites in the Defense Satellite Communication System Processing Facility using any means available, including such methods as using storage and shipping containers, plastic covers, and antenna radiation hats. These methods do not constitute an adequate means of protection against serious hurricane force winds. To eliminate this situation, the Air Force proposes the construction of a reinforced storage facility for the protection of these satellites.

A proposed site and a secondary alternative site for the construction of the reinforced storage facility have been evaluated. Both of these sites, located in a cluster of facilities on Flight Control Road, are within 100 feet of each other. Several other alternative sites were considered; however, they were eliminated from further consideration because they were not as desirable or they would have caused significant environmental impacts.

#### **Environmental Consequences and Benefits**

No significant environmental impacts at either of the Flight Control Road sites were identified that would require the completion of an Environmental Impact Statement.

#### **Geology, Soil, and Water Resources**

During construction, land disturbance has the potential to accelerate erosion. Prior to and during land clearing, erosion and sediment control measures would be designed and implemented to retain sediment on-site and prevent violation of state and federal water quality standards. Short-term impacts to soils may result, but long-term impacts would not be significant.

Any erosion or shoaling that could adversely impact water resources would be mitigated by implementing best management practices established by the Florida Division of Forestry. Where applicable, best management practices required by water quality certifications and National Pollutant Discharge Elimination System permits would be implemented.

## Biological Resources

Construction of a satellite alert facility would cause minimal biological impacts at either of the Flight Control Road locations. The land is already cleared, kept mowed, and has been for some time. Ms Angy Chambers of 45 CES/CEV and Mr. A. Maddox of SRS Technologies conducted a walk down of both sites and found no evidence of any endangered species nor any exotic plant species at either site. The facility would be constructed in accordance with 45<sup>th</sup> Space Wing Instruction 32-7001, Exterior Lighting Management. A Light Management Plan would be completed to reduce potential impacts to nesting and hatching sea turtles as the result of exterior lighting.

Construction activities, such as noise, that could result in short-term impacts to avian and mammalian species would not be considered of a magnitude to result in adverse impacts to populations within the vicinity of either the proposed site or the secondary alternative.

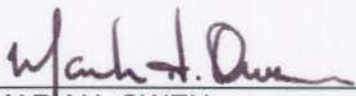
## Cumulative Impacts

Cumulative effects result from the incremental effect of an action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

No other actions have occurred over the past five years within the region of influence of the proposed satellite alert facility that would result in a cumulative effect when considered in conjunction with the activities of the proposed action or the secondary alternative.

## Conclusion

After careful review of the potential impacts of this action, I have concluded that the action's implementation would not have a significant impact on the quality of the human or natural environment or generate significant controversy. A notice of availability for public review was published, and a 30-day review period for the draft final environmental analysis was completed. This analysis fulfills the requirements of the NEPA and Council on Environmental Quality regulations.

  
\_\_\_\_\_  
MARK H. OWEN  
Colonel, USAF  
Commander

3 December 2005  
Date



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### 1.0 Introduction

This introductory chapter provides an overview of the National Environmental Policy Act (NEPA) and the Council on Environmental Quality regulations for the conduct of an Environmental Assessment (EA) as well as the purpose of and need for the proposed action. Relevant federal and state regulation, statutes, and permits are addressed.

### 1.1 Overview

The NEPA and the Council on Environmental Quality regulations require the preparation of an EA to evaluate the potential impacts of federal actions on the surrounding environment. Council on Environmental Quality regulations require that an EA provide evidence and analysis to determine whether a proposed action might have significant effects that would require preparation of an Environmental Impact Statement. If the analysis determines that the environmental effects are not significant, a Finding of No Significant Impact is prepared.

### 1.2 Project Location

Cape Canaveral Air Force Station (CCAFS) is located in the State of Florida along the Atlantic coast in Brevard County. The installation occupies the majority of the Canaveral Peninsula, a barrier island located approximately 155 miles south of Jacksonville, 210 miles north of Miami, and 55 miles east of Orlando. The installation is bordered on the north by the Canaveral National Seashore, on the south by Port Canaveral, on the east by the Atlantic Ocean, and on the west by the Banana River, which is an estuarine system.

CCAFS encompasses approximately 15,804 acres that support the space launch and test requirements of the Department of Defense (DoD), the 45th Space Wing (45 SW), the National Aeronautics and Space Administration (NASA), the Naval Ordnance Test Unit, the Florida Space Authority, and numerous commercial contractors. Figure 1.1 shows CCAFS and the surrounding area.

### 1.3 Purpose of and Need for Proposed Action

There are currently no facilities at CCAFS, Kennedy Space Center (KSC), or the surrounding communities rated to withstand more than a Category 2 Hurricane. Global Positioning System IIR satellites valued at 45 million dollars each are currently being stored in the Defense Satellite Communication System Processing Facility. The processing facility is projected to have well over 350 million dollars in satellite assets during the peak of upcoming hurricane seasons.

The response to any impending hurricane in the near future will be to protect the satellites inside the Defense Satellite Communication System Processing Facility using any assets available, including storage and shipping containers, plastic covers, and antenna radiation hats. However, if the Defense Satellite Communication System Processing Facility is compromised or fails during a major hurricane, it is unlikely that these measures would prevent significant damage to the satellites, and damage could possibly even result in the catastrophic loss of the satellite assets, for the measures are not designed to protect against major hurricane force winds, rain, and flooding.

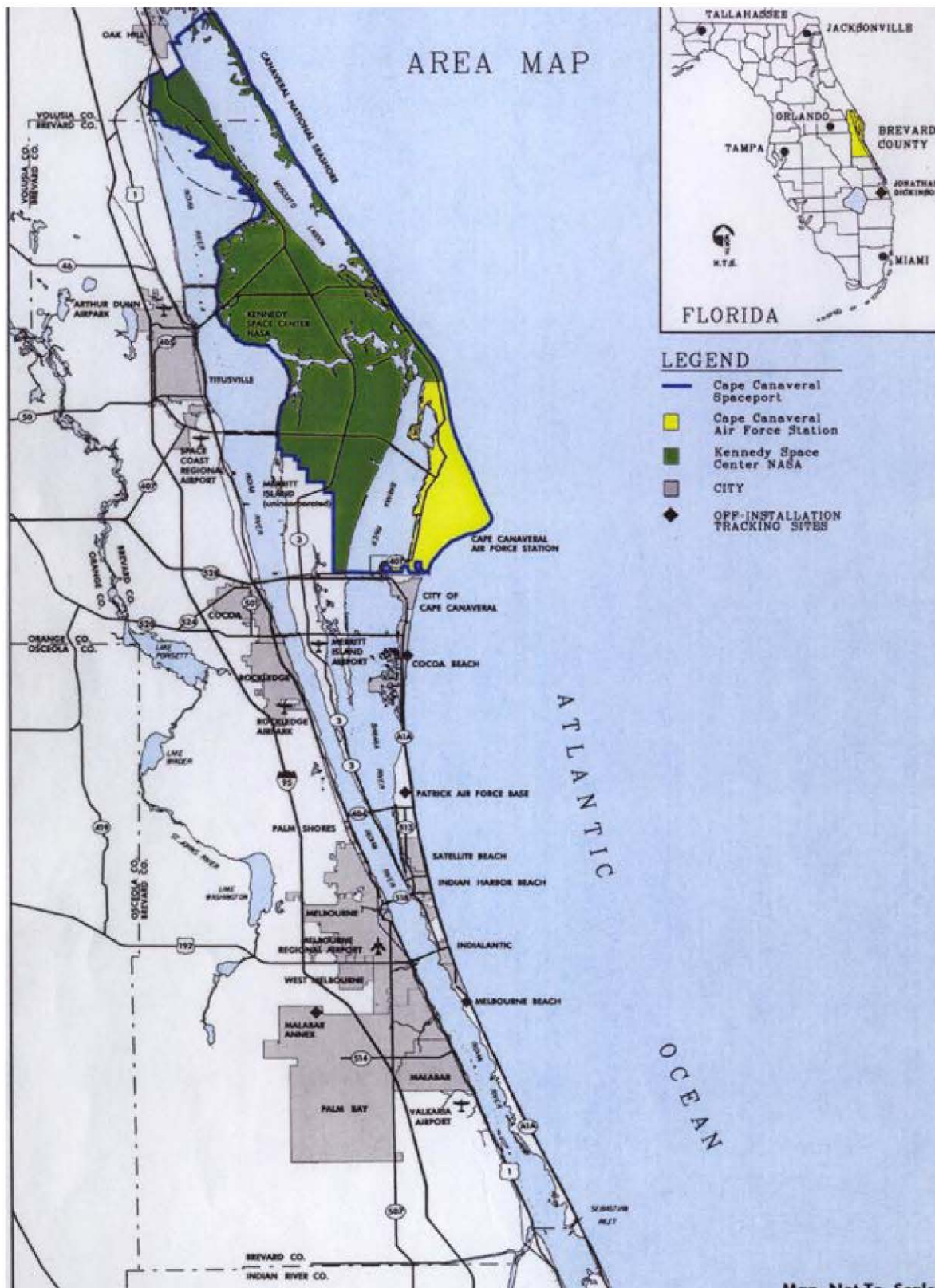


Figure 1.1. Area map of Cape Canaveral Air Force Station and surrounding area.

Until a more secure facility can be built, well over 350 million dollars worth of satellite assets will continue to be at risk during peak hurricane seasons. Loss of these national assets could significantly degrade the on-orbit constellation, rendering the Global Positioning System navigation signal system less than useful. Additionally, if these assets are damaged or destroyed, the vital Block IIR and IIF programs cannot be implemented due to the lack of asset availability from the next generation Global Positioning System satellites still in the early stages of procurement. As a result, the Air Force proposes to construct a reinforced facility to house and protect these assets.

As noted earlier, CCAFS is located along the Atlantic coast in central Florida. The Atlantic coast has the largest number of hurricanes with many of them targeting Florida. Central Florida is at great risk from hurricanes each year. The 2004 hurricane season is a prime example of the multitude of hurricanes that threaten central Florida. Figures 1.2 through 1.4 show the paths that three hurricanes took through the center of the Florida peninsula during 2004. Figure 1.2 shows the history of Charlie, a category 4 hurricane that crossed the Florida peninsula from the Gulf of Mexico.



Figure 1.2. History of *Hurricane Charley*.

Figure 1.3 shows the history of Frances, a category 2 hurricane that came ashore on Florida's east coast approximately 60 miles south of CCAFS, while Figure 1.4 shows the history of Jeanne, a category 3 hurricane that came ashore several miles from the land-fall of Hurricane Frances.



Figure 1.3. *History of Hurricane Frances.*



Figure 1.4. *History of Hurricane Jeanne.*

All of these figures show how vulnerable CCAFS is to the devastation of hurricane force winds and tides. Moreover, the 2004 hurricane season is not an anomaly. Figure 1.5 is a graph of compiled data showing the Atlantic named storms, hurricanes, and major hurricanes from 1995 to 2002.

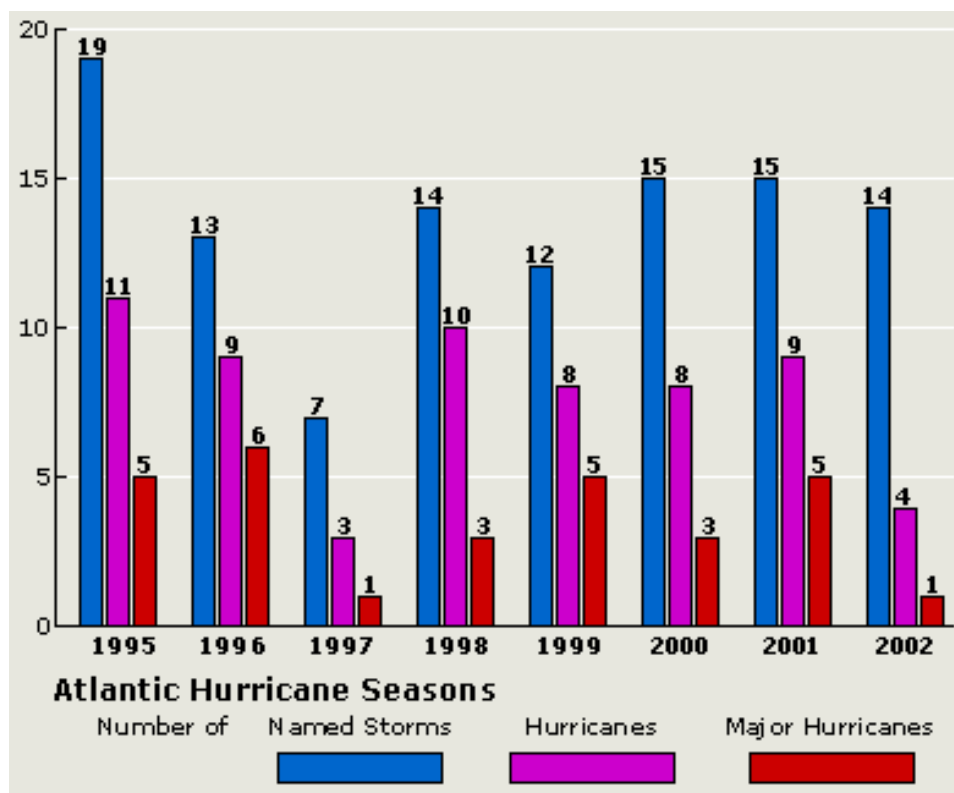


Figure 1.5. Atlantic named storms, hurricanes, and major hurricanes from 1995 through 2002.

#### 1.4 Scope of the Environmental Assessment

This EA supports the Air Force in the decision to locate, construct, and operate a new satellite alert facility for the safe storage of satellites. As such, it describes the potential environmental impacts associated with the construction of the facility, and the mitigation measures developed to avoid, minimize, or offset adverse impacts as identified in the assessment.

This EA was conducted and prepared in accordance with the Council on Environmental Quality regulations, the provisions of the *National Environmental Policy Act of 1969* (40 Code of Federal Regulations [CFR] Parts 1500-1508), *Environmental Impact Analysis Process* (32 CFR Part 989), and the Department of Defense Directive 6050.1, *Environmental Effects in the United States of Department of Defense Actions*.

This assessment considered thirteen environmental resources to provide a context for understanding the potential effects of the proposed action and for assessing the significance of potential impacts.

The resource areas considered in this analysis include:

- Earth resources - topography, soils, and geology
- Biological resources – vegetation and wildlife
- Water resources – groundwater, surface water, and water quality
- Air quality
- Noise
- Socioeconomics
- Land use – land use categories, coastal management, recreation, aesthetics
- Utilities – water, solid waste, electricity
- Traffic and transportation
- Hazardous materials and waste management – hazardous wastes management, pollution prevention, Installation Restoration Program
- Cultural resources
- Invasive plant species
- Environmental justice

### 1.5 Organization of the Assessment

Chapter 2 of this EA describes the Air Force's proposed action, the secondary alternative action, and a no-action alternative. Chapter 3 provides an overview of the existing environmental conditions by resource area.

Chapter 4 analyzes the environmental consequences of implementing the proposed action and any feasible alternatives, as well as the no-action alternative, on resource areas. Only resources with the potential to be adversely affected are analyzed in detail in this chapter.

### 1.6 Relevant Federal and State Regulations, Statutes, and Permits

The representative federal and state regulations, statutes, and permits that were considered during the conduct of this EA are listed in the table in Appendix A.

## 2.0 Description of Site Requirements, the Proposed Action, and Alternatives

This chapter describes the site and construction requirements for the proposed Air Force satellite alert facility, the secondary alternative, and a no-action alternative that were considered during the conduct of this EA.

### 2.1 Site Requirements

To meet the site requirements for a satellite storage facility, the following criteria must be considered:

- Transportation accessibility
- Utilities – adequate water, sewer, power, and communications
- Lines of sight – Air Force instrumentation, KSC instrumentation, miscellaneous instrumentation systems
- Radio frequency emissions and electromagnetic interference
- Air approach corridors – vertical and horizontal clearances
- Launch impacts – impact limit lines, overflight/flight hazard area, blast danger area, tanking operations
- Cost impacts – demolition of existing structures, installation of new utilities

### 2.2 New Satellite Alert Facility Off Flight Control Road

As noted in Chapter 1, the proposed action is to construct a new satellite alert facility along Flight Control Road at CCAFS. Both the proposed action and the secondary alternative would meet the requirements in 2.1 for the facility and site.

Moreover, the proposed action site and the secondary alternative site are situated in a complex that is almost fully developed with the following facilities:

- Navstar Propellant Loading Facility, Facility Number 55885
- Propellant Servicing Facility, Facility Number 55840
- DSCS Processing Facility, Facility Number 55820
- Navstar Satellite Storage Facility, Facility Number 55815
- Navstar Processing Facility, Facility Number 55810

Figure 2.1 provides a map of the general project location on CCAFS. The red star near the center of the map shows the approximate location of both the proposed action and the secondary alternative along Flight Control Road.

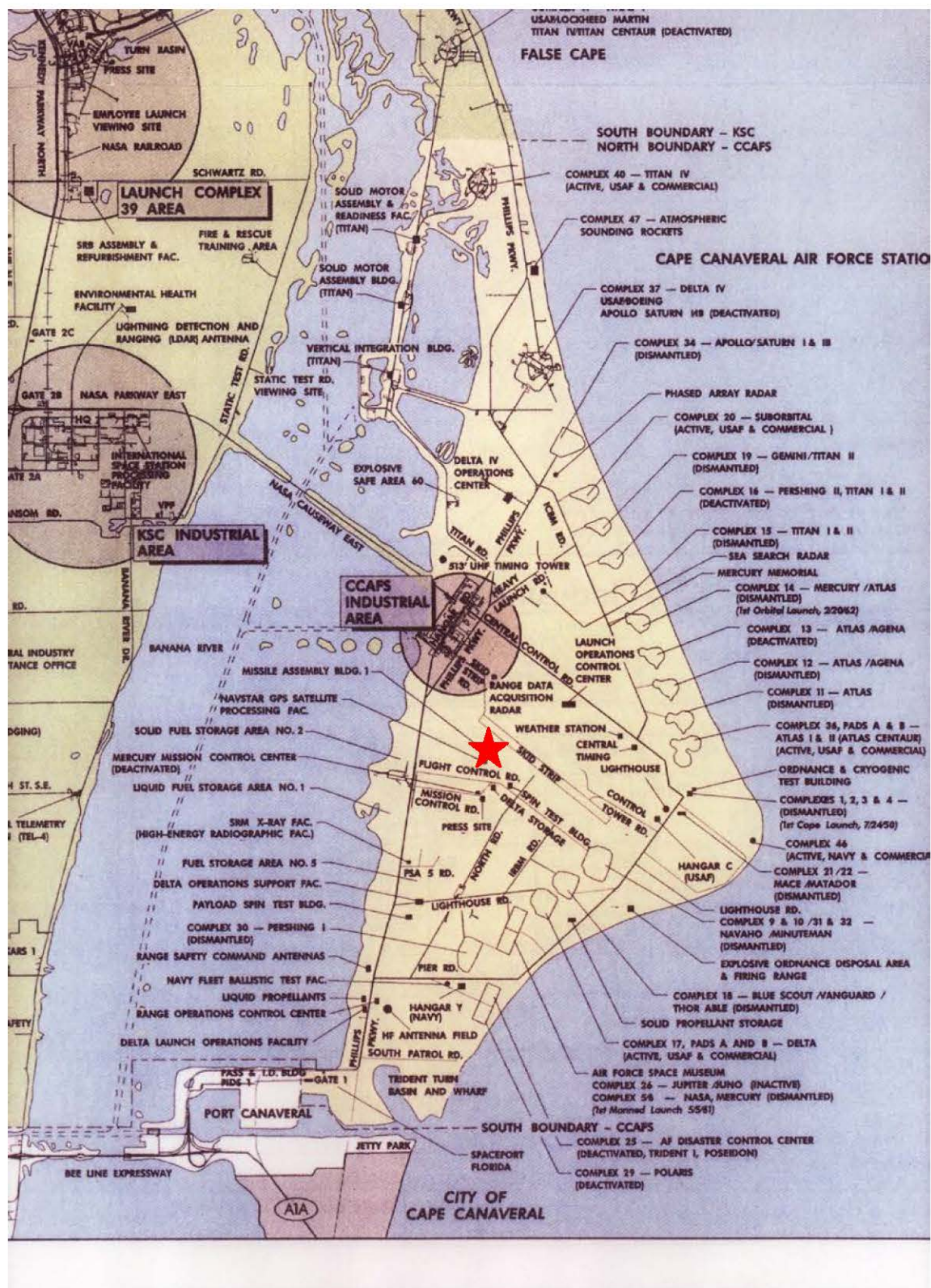


Figure 2.1. Flight Control Road location for proposed action and secondary alternative.

The Flight Control Road site can accommodate a building up to 180 feet in elevation without interfering with airfield clearance requirements and is not within the impact limit lines of any space launch complex. (See Figure 2.2.)

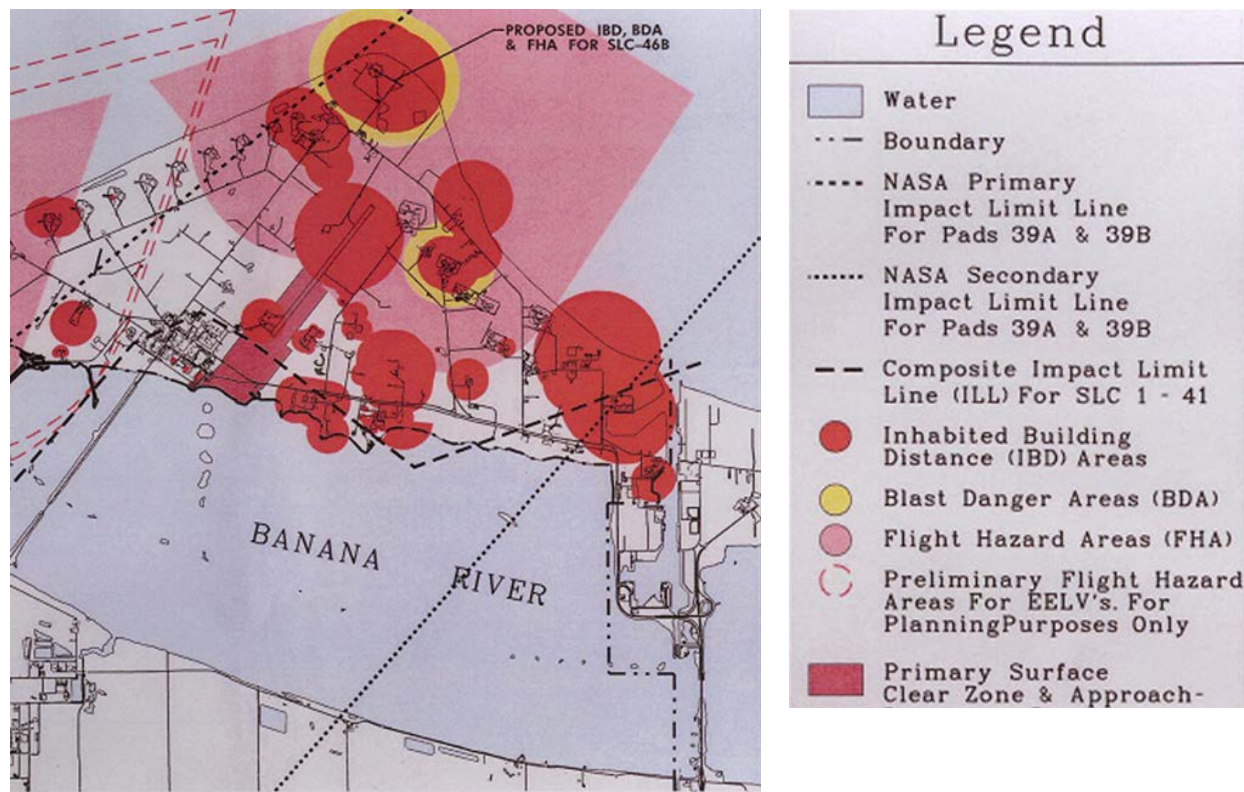


Figure 2.2. Site impact limit lines, inhabited building distance areas, blast danger areas, and flight hazard areas.

Infrastructure components—electrical power, water supply, sewer, and communications lines—are readily available in the vicinity of the site and would not entail excessive disturbance or construction to connect to the proposed facility.

The site falls within an Inhibited Building Distance location (see Figure 2.2 above), the minimum distance to be maintained from any operating building or site that contains or is designed to contain explosives to a building or site occupied by human beings not related to the operating line. Inhabited buildings include facilities both on and off DoD facilities.

As previously stated, all of the land needed for the construction of the satellite alert facility is already cleared. No virgin land is required to be cleared or disturbed at the proposed or secondary alternative site. Figure 2.3 shows the proposed action (identified as the project area). The secondary alternative site is also identified (smaller circle). The proposed and secondary alternative sites consist only of mowed grass. A photograph of the proposed action site is also included in Figure 2.4.

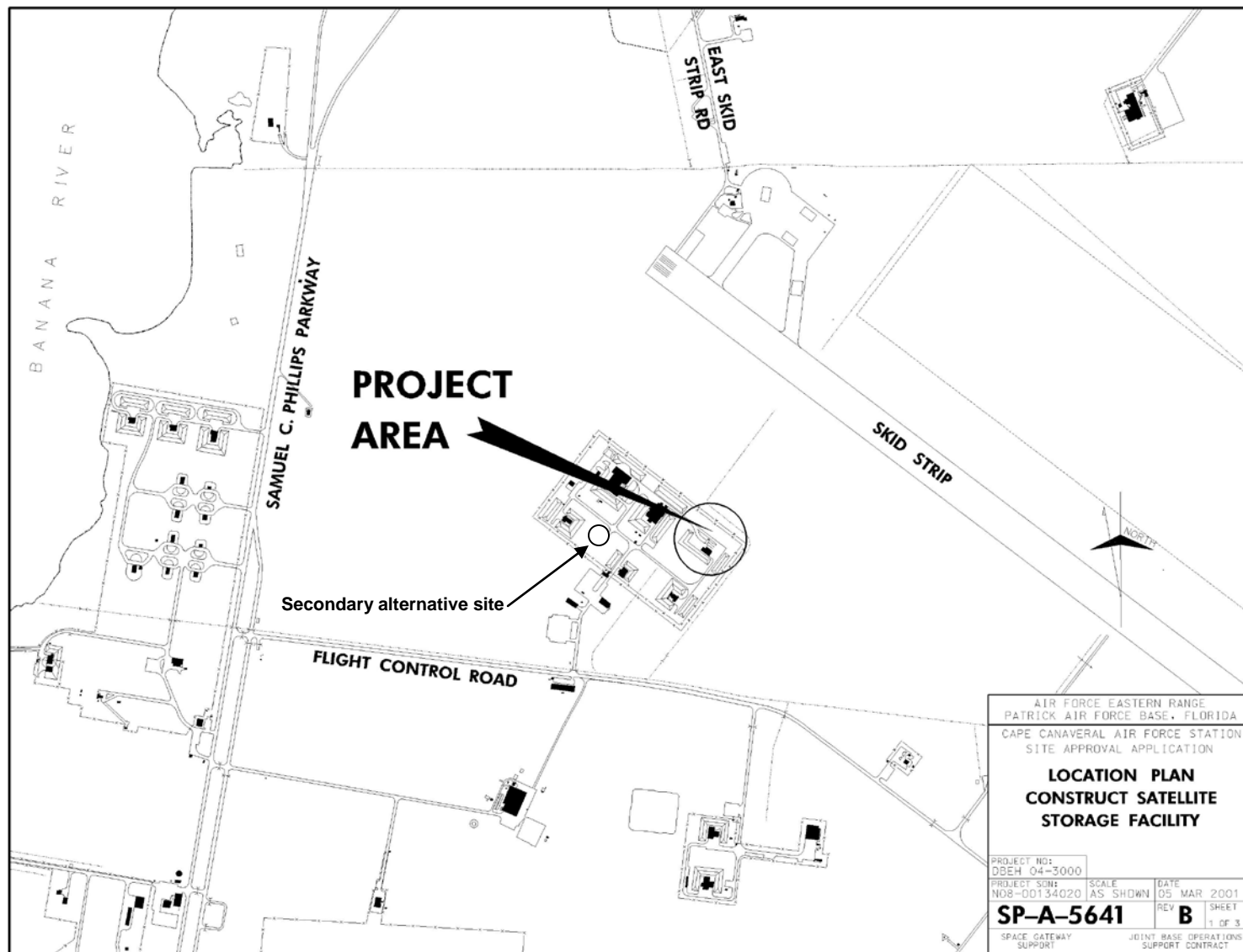


Figure 2.3. Proposed action (project area) and secondary alternative site locations.



Figure 2.4. Photograph of the proposed action site with existing fence line visible in background.

Under the proposed action, the project would be located a few hundred feet away from the secondary alternative site in an area that has already been cleared. This site would require impervious foundations to be constructed. Under both the proposed action and the secondary alternative, the impervious foundations would be the same. The proposed satellite storage facility would be 50 feet by 75 feet. There would be a 5-foot by 10-foot concrete pad for a 500-gallon fuel tank. Additionally, there would be a 70-foot by 37.5-foot concrete slab and a 15-foot by 35-foot ramp. A site plan for the proposed action is shown in Figure 2.5. There would be no further restrictions of any burn control as this action would be built within a fenced area which already has very stringent control burn specifications and this action would have no bearing on this procedure.

Under the secondary alternative, the project would be located a few hundred feet away from the proposed action site in an area that has already been cleared. Additionally, this site would require the same impervious foundations to be constructed as in the proposed action area. In the secondary alternative site area, there would be no further restrictions of any burn control as this action would be built within a fenced area that already has very stringent control burn specifications and this action would have no bearing on this procedure.

### 2.3 No-Action Alternative

Under the no-action alternative, a new satellite alert facility would not be constructed. Thus, no infrastructure improvements or ground and habitat disturbances would result. Under this alternative, the satellites would still be at great risk of considerable damage or destruction from a serious hurricane. No adverse environmental impacts would result.

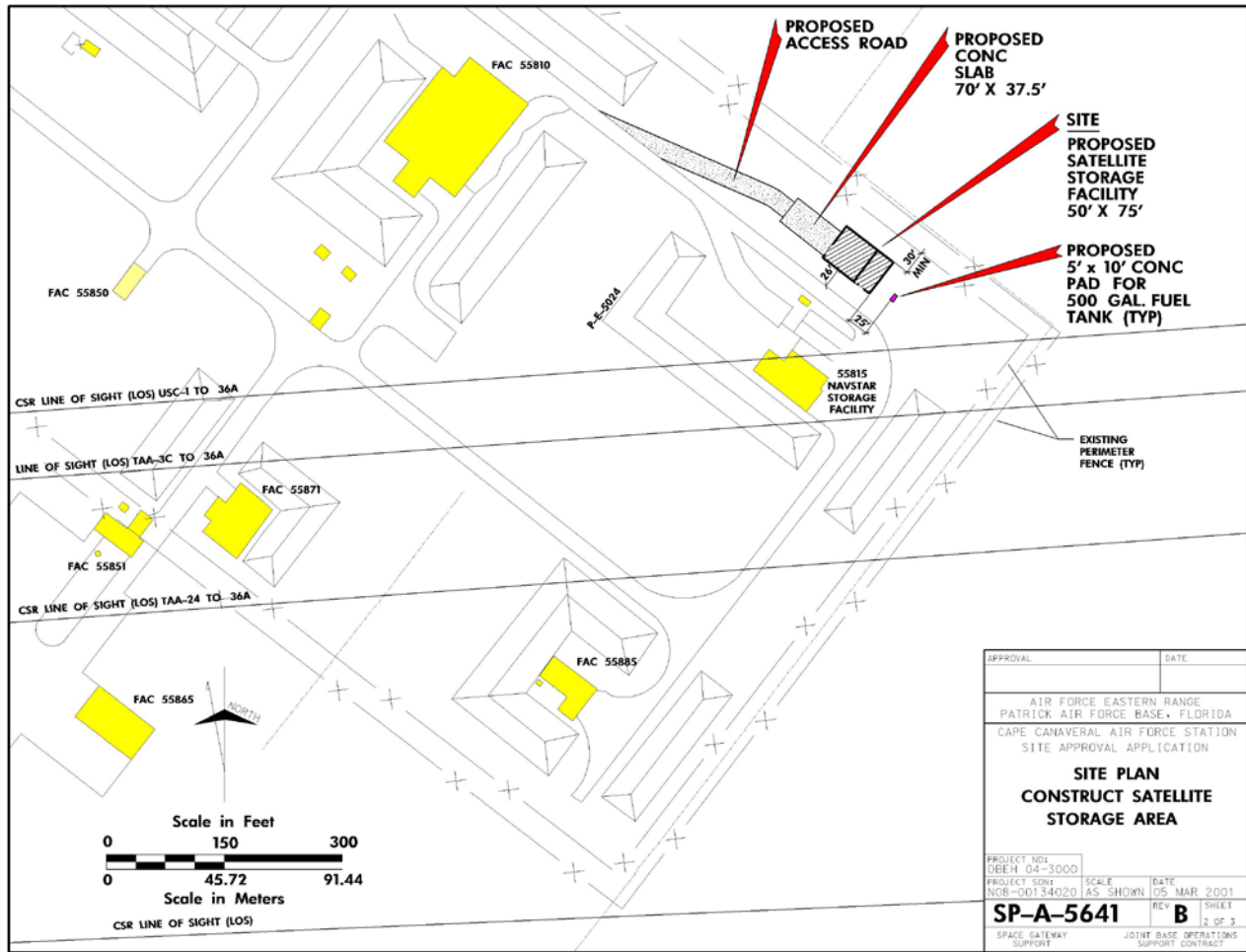


Figure 2.5. Site plan for proposed action site.

### 3.0 Description of the Affected Environmental Setting

This chapter describes the environmental setting where the proposed action is planned. When relevant for a particular resource area, a region of influence (ROI) was established. The ROI is the geographic area within which a federal action, program, or activity may cause changes in the natural or man-made environment.

#### 3.1 Earth Resources

The earth resources examined include topography, soils, and geography.

##### 3.1.1 Topography

The topography of CCAFS ranges from sea level to gently sloping elevations that range from 0 feet to 20 feet above mean sea level. CCAFS is a barrier island consisting of a series of relic dune ridges. The eastward progressing ridges were laid down as sea levels gradually decreased from the Ice Age over the last 7,000 years (45<sup>th</sup> Space Wing, 2002).

Topographic units occurring within CCAFS are as follows:

- Dune and Swale Area – between the Banana River Lagoon and the Atlantic Ocean
- Marshland Areas – adjacent to the Banana River and impounded areas
- Open Water Areas – lagoons, estuaries, lakes, natural and man-made ponds, borrow pits and drainage canals. Within this unit are brackish water impoundments. Open water areas also include portions of the Banana River between the mainland and the Integration, Transfer, and Launch area (45<sup>th</sup> Space Wing, 2002).

##### 3.1.2 Soils and Geography

Located within the coastal lowlands, CCAFS is composed of Canaveral-Palm Beach-Welaka soils that are categorized at nearly level to gently sloping and moderately to excessively well-drained sand ridges interspersed with narrow wet slough that generally parallel the ridges. These soils are exceptionally dry even though the water table is often near the surface during rainy periods. As a result, these soils are unsuited to farming, but good for drainage.

Structurally, the soils have a bearing capacity between 2,000 and 2,500 pounds per square foot, which is the pressure that a shallow foundation unit can impose onto the supporting earth mass without causing over-stressing. Also, CCAFS sandy surface soils occasionally have difficulty reaching the structural engineer's required compaction, which is crucial in preventing future facility settlement. In these cases, the existing soil is removed and replaced with suitably compacted earth fill. Portions of CCAFS are classified as "urban land" where the soils have been covered by facilities and pavement, making identification of native soil types impractical (U.S. Air Force, 1993). The project location for the proposed action and the secondary alternative fall within this urban land category (45<sup>th</sup> Space Wing, 2001a).

The principal geologic hazard in central Florida is sinkholes that develop when overlying soils collapse into existing cavities. CCAFS is not located in an active sinkhole area. An in-depth review completed in 1998 did not reveal the presence of any sinkholes (U.S. Air Force, 1998). The Canaveral Peninsula is not prone to sinkholes, since the limestone formations are over 100 feet below the ground surface, and confining units minimize re-charge to the limestone (45th Space Wing, 1996a).

## **3.2 Biological Resources**

CCAFS occupies 15,804 acres of coastal habitat on a barrier island complex that parallels the mid-Atlantic coast of Florida. The most prominent geographical features at CCAFS, besides the cape itself, are a series of ridges and swales that parallel ancient and current coastlines and support ecologically significant natural communities.

Barrier islands are ecosystems that support many species of plants and animals. Along the Atlantic coast of the United States, barrier islands are especially important to nesting sea turtles, populations of small mammals, and as foraging and roosting habitat for a variety of resident and migratory birds.

The biological resources examined include vegetation and animal species. The ROI for biological resources covers the land area directly affected by construction activities associated with the project

### **3.2.1 Vegetation**

Historically, CCAFS has had a relatively small human population, resulting in minor changes to native vegetation and some introduction of non-native species such as Brazilian Pepper trees that are a significant problem as an invasive exotic. As a result of human habitation and development of the installation as a spaceport, approximately 60 percent of CCAFS acreage consists of undeveloped areas, with vegetation indigenous to the Florida coastline. The proposed and secondary alternative sites for the proposed action are located on mowed grass; no natural areas exist in the vicinity. The nearest natural area is located approximately 150 feet outside the perimeter fence, and this area consists of oak scrub. Figure 3.1 provides a vegetation map for the proposed action, secondary alternative, and the surrounding area.

### **3.2.2 Wildlife**

The various habitats on CCAFS support a wide variety of animal species, including amphibians, reptiles, mammals, and migratory and native birds. Numerous species of birds that are federally protected by the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. 703-712), occur near the sites. The Migratory Bird Treaty Act provides federal protection to all native avian species, their nests, eggs, and unfledged young. Bird species that are likely to occur include mourning dove (*Zenaida macroura*), house wren (*Troglodytes aedon*), loggerhead shrike (*Lanius ludovicianus*), brown thrasher (*Toxostoma rufum*), and Eastern towhee (*Pipilo erythrophthalmus*).

A. Chambers of 45 CES/CEV and A. Maddox of SRS Technologies conducted a walk down of the proposed site and the secondary alternative site and found no evidence of any threatened or endangered (T&E) species at either site. The nearest T&E habitat supporting these species is over 200 feet away, outside the perimeter fence of the area.

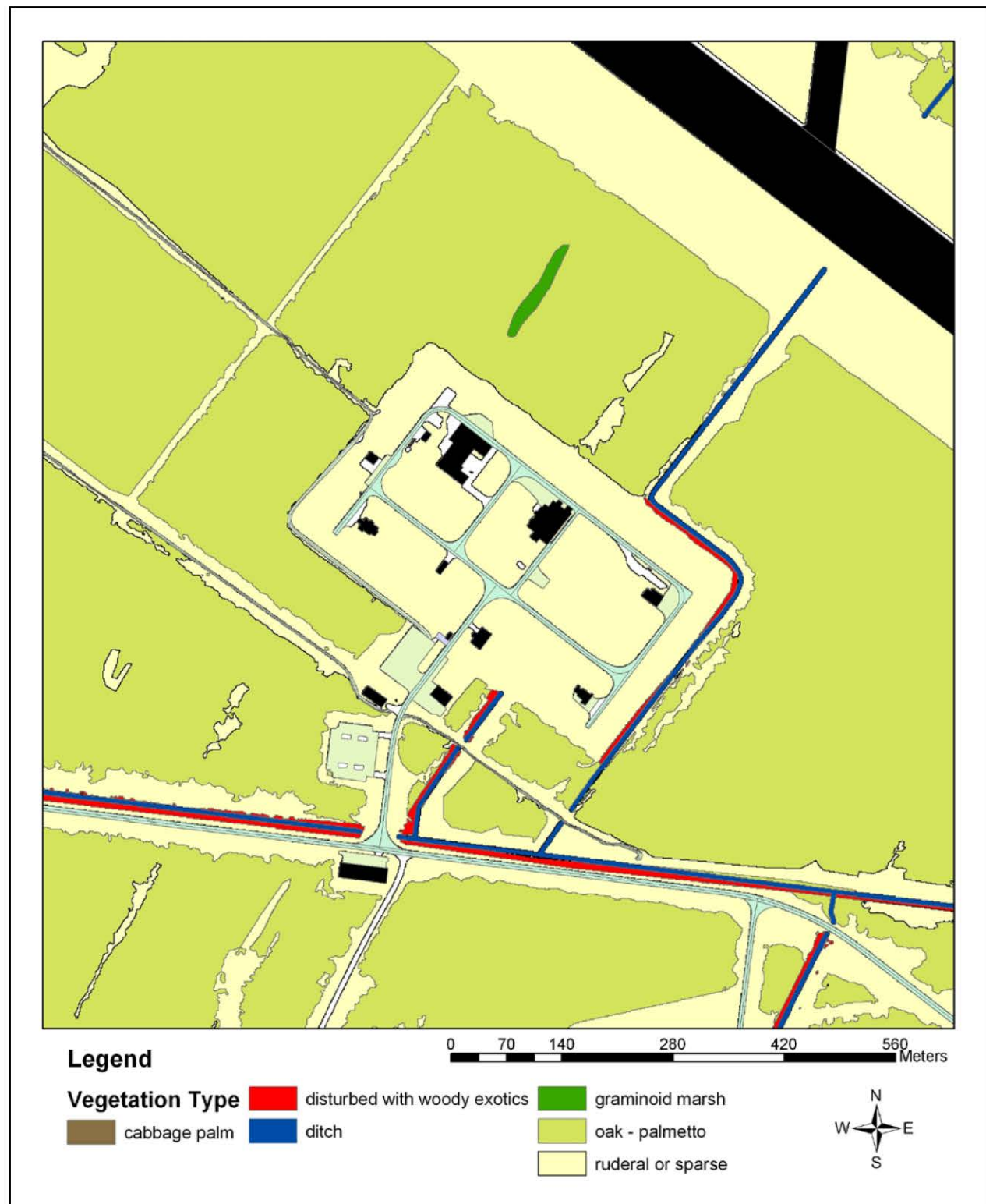


Figure 3.1 Vegetation map for project area.

Three species of federally protected sea turtles have been documented as nesting on CCAFS: the threatened loggerhead (*Caretta caretta*) and the endangered green (*Chelona mydas*) and leatherback (*Dermochelys coriacea*). While sea turtles spend much of their lives in the ocean, females come ashore each year to nest. Research has shown that females will avoid highly illuminated beaches and postpone nesting. Artificial lights have also resulted in hatchling mortality as disoriented hatchlings move toward these light sources rather than the ocean.

In 1988, in compliance with Section 7 of the Endangered Species Act, the U.S. Air Force developed Light Management Plans (LMPs) for various areas and facilities on CCAFS to protect sea turtles. A Biological Opinion issued by the U.S. Fish and Wildlife Service (USFWS) on 9 April 1990, and updated on 2 May 2000, requires that all new facilities develop a LMP. In addition, the AF created 45<sup>th</sup> Space Wing Instruction (SWI) 32-7001, *Exterior Lighting Management*, which implements the Biological Opinion and explains management responsibilities, exterior lighting restrictions and reporting requirements necessary for the 45 SW to remain in compliance with the Biological Opinion.

### 3.3 Water Resources

Water resources include groundwater and surface water and their physical, chemical, and biological characteristics. This section addresses the physical and chemical factors that influence water quality and surface runoff. The ROI for groundwater includes the local aquifers that are directly or indirectly used by CCAFS. The ROI for surface water is the drainage system/watershed in which the station is located.

The St. John's River Water Management District issues the Environmental Resource Permit, which includes storm water and wetlands management, in coordination with the Florida Department of Environmental Protection and the U.S. Army Corps of Engineers. There are no wetlands within the fence line of the developed complex where the proposed action and secondary alternative would be located (45<sup>th</sup> Space Wing, 2001a).

The U.S. Environmental Protection Agency is responsible for management of the National Pollution Discharge Elimination System permit process and wastewater discharges.

#### 3.3.1 Groundwater

Two aquifer systems underlie CCAFS: the surficial and the Floridan aquifer systems. The surficial aquifer system, which comprises generally sand and marl, is under unconfined conditions and is approximately 70 feet thick. The water table in the aquifer is generally a few feet below the ground surface. Recharge to the surficial aquifer is principally by percolation of rainfall and runoff. Groundwater in the surficial aquifer at CCAFS generally flows to the west, except along the extreme eastern coast of the peninsula.

A confining unit composed of clays, sands, and limestone separates the surface aquifer from the underlying Floridan aquifer. The confining unit is generally 80 to 120 feet thick. The relatively low hydraulic conductivity of the confining unit restricts the vertical exchange of water between the surface aquifer and the underlying confined Floridan aquifer. The Floridan aquifer is the primary source of potable water in central Florida and is composed of several carbonate units with highly permeable zones. The top of the first carbonate unit occurs at a depth of approximately 180 feet below ground surface, and

the carbonate units extend to a depth of several hundred feet. Groundwater in the Floridan aquifer at CCAFS is highly mineralized.

CCAFS receives its potable water from the city of Cocoa, which pumps water from the Floridan aquifer. According to the General Plan (45th Space Wing, 1995), this water supply is more than adequate to meet usage demands and water quality standards.

### 3.3.2 Surface Water

CCAFS is situated on a barrier island that separates the Banana River from the Atlantic Ocean. The station is within the Florida Middle East Coast Basin. This basin contains three major bodies of water in proximity to the station—the Banana River to the immediate west, the Mosquito Lagoon to the north, and the Indian River to the west, separated from the Banana River by Merritt Island. All three water bodies are estuarine lagoons, with circulation provided mainly by wind-induced currents. Surface drainage at CCAFS generally flows to the west into the Banana River, even near the eastern side of the peninsula.

Several water bodies in the Middle East Coast Basin have been designated as Outstanding Florida Water in Florida Administrative Code 62-3, including most of the Mosquito Lagoon and the Banana River, the Indian River Aquatic Preserve, the Banana River State Aquatic Preserve, Pelican Island National Wildlife Refuge, and Canaveral National Seashore. These water bodies are afforded the highest level of protection, and any compromise of ambient water quality is prohibited. The Indian River Lagoon System has also been designated an Estuary of National Significance by the U.S. Environmental Protection Agency. Estuaries of National Significance are identified to balance conflicting uses of the nation's estuaries while restoring or maintaining their natural character.

The Banana River has been designated a Class III surface water, as described by the Clean Water Act. Class III standards are intended to maintain a level of water quality suitable for recreation and the production of fish and wildlife communities. There are no wild and scenic rivers located on or near CCAFS.

Floodplains are lowland and relatively flat areas adjoining inland and coastal waters that are subject to flooding. The 100-year floodplain is subject to a 1-percent or greater chance of flooding in any given year. On CCAFS, the 100-year floodplain extends 7 feet above mean sea level on the Atlantic Ocean side, and 4 feet above mean sea level on the Banana River side. The proposed action and secondary alternative sites are not located within a floodplain (45<sup>th</sup> Space Wing, 2002).

### 3.3.3 Water Quality

Surface water quality near CCAFS and KSC is monitored at 11 long-term monitoring stations that are maintained by NASA. The Florida Department of Environmental Protection has classified water quality in the Florida Middle East Coast Basin as “poor to good” based on the physical and chemical characteristics of the water, as well as whether they meet their designated use under Florida Administrative Code 62-3.

The upper reaches of the Banana River adjacent to CCAFS and the lower reaches of Mosquito Lagoon have generally good water quality due to lack of urban and industrial development in the area. Nutrients and metals, when detected, have generally been be-

low Class II standards (NASA, 1995). Areas of poor water quality exist along the western portions of the Indian River, near the city of Titusville, and in Newfound Harbor in southern Merritt Island. Fair and poor water quality areas are influenced primarily by wastewater treatment plant effluent discharges and urban runoff.

### **3.3.4 Storm Water Management**

The CCAFS watershed consists primarily of undeveloped scrub and forest vegetation with a flat topography. The installation also includes cleared grounds of turf grasses and herbaceous weeds, storage yards, a landfill, a skid strip, roadways and parking, and numerous administrative processing and launch facilities. These latter areas produce the vast majority of storm water runoff and have the potential to contribute significantly to non-point pollution in surrounding surface waters. The potential for storm water non-point source pollution at CCAFS is minimized by storage of runoff in retention ponds and swales, and best management practices to reduce exposure of potential contaminants to storm water.

Construction of new facilities and impervious surfaces include surface water management systems that collect runoff into a system of swales or retention basins. These storm water facilities filter out and break down contaminants from water passing through vegetation and soils and percolate runoff into the surficial aquifer. Most facilities and pavements constructed at CCAFS since 1985 include a storm water collection system. Older facilities and impervious areas on the installation generally have storm water drainage facilities that are designed more for conveyance and off-site discharge of storm water, as opposed to on-site collection/disposal.

### **3.3.5 Potable Water Quality**

A large part of the CCAFS water system was installed before the establishment of the Clean Water Act and the Safe Drinking Water Act. As a result, the water quality does not meet these newer standards. In addition, the extended age of the system has resulted in instances on CCAFS of water quality being substandard due to the content of metals and metallic oxides resulting from piping wear and corrosion by-products. Trihalomethanes and corrosion products have been found in the water system. Trihalomethanes were found primarily in the Integration, Transfer, and Launch area, and corrosion by-products throughout CCAFS, but mostly in older facilities. Trihalomethanes are potentially carcinogenic and a health concern. Corrosion is also a regulatory concern with regard to levels of lead and copper.

To provide “clear, potable water safe for human consumption,” the 45 SW has contracted with the City of Cocoa for a potential 5 millions of gallons per day for CCAFS and KSC. Under the terms of a contract negotiated by the Air Force with the City of Cocoa, NASA initially provided over \$2 million to expand the potable water system owned by the City of Cocoa. The Claude H. Dyal Water Treatment Plant, located 15 miles west of Cocoa, along State Road 520 near an artesian well field in Orange County, can operate the well field safely at 31 millions of gallons per day and 48 millions of gallons per day for maximum flows.

The system currently processes approximately 9 billion gallons of water each year, with peak flow reaching 39 millions of gallons per day during the summer and daily flows averaging 25 millions of gallons per day. Treated water from ground sources is currently

pumped through water mains to CCAFS and KSC, the two of which routinely demand an average of 1.7 millions of gallons per day. Approximately 0.7 millions of gallons per day are used by CCAFS, and another 1.0 millions of gallons per day is used by KSC.

### **3.4 Air Quality**

Air quality for CCAFS is regulated under Title 40 CFR 50 (National Ambient Air Quality Standards), Title 40 CFR 61 and 63 (National Emission Standards for Hazardous Air Pollutants), Title V of the Clean Air Act, 42 U.S.C. 7401-7671 (Operating Permits), 40 CFR 82 (The Federal Stratospheric Ozone Protection Program), and Florida Administrative Code 62-204.240 seq. (Florida Ambient Air Quality Standards). Existing air quality is defined as either being “in attainment” or “in non-attainment.” An area with ambient air quality better than the National Ambient Air Quality Standards is designated as being in attainment, whereas areas that do not meet the minimum standards are classified as being in non-attainment.

In Florida, regional air quality is assessed at the county level. CCAFS is located within Brevard County. The U.S. Environmental Protection Agency and the Florida Department of Environmental Protection have designated Brevard County as being in attainment for all criteria pollutants. Ambient air monitoring records from monitoring stations maintained by the appropriate state and/or local agency for the affected environment were reviewed to characterize the existing air quality. Information about pollutant concentrations measured for short-term (24 hours or less) and long-term (annual) averaging periods was extracted from the monitoring station data. Table 3.1 shows recent monitored air concentrations near CCAFS.

Emission inventory information for the affected environment was obtained from the Florida Department of Environmental Protection and from CCAFS to describe baseline conditions in the area (U.S. Air Force, 2002). The most recent emission inventories for CCAFS and Brevard County are presented in Table 3.2.

### **3.5 Noise**

Noise is usually defined as unwanted sound. The characteristics of sound include parameters such as amplitude, frequency, and duration. Sound can vary over an extremely large range of amplitudes. The decibel (dB), a logarithmic unit that accounts for the large variations in amplitude, is the accepted standard unit for the measurement of sound.

Different sounds may have different frequency content. When measuring sound to determine its effects on a human population, it is common to adjust the frequency content to correspond to the frequency sensitivity of the human ear. This adjustment is called A-weighting (American National Standards Institute, 1988). Sound levels that have been so adjusted are referred to as A-weighted sound pressure levels. The unit is still a dB, but the unit is sometimes written dBA for emphasis. Figure 3.2 shows typical A-weighted sound levels.

Table 3.1. Ambient air concentrations near CCAFS.

Pollutant	Station	2001	2002	2003
<b>Carbon Monoxide (CO)</b> – ppm; EPA Standards: 1-hour=35ppm 8-hour=9ppm				
1-hour 1 <sup>st</sup> max	Winter Park, Orange County	8.0	3.8	2.6
1-hour 2 <sup>nd</sup> max	Winter Park, Orange County	2.7	3.5	2.3
8-hour 1 <sup>st</sup> max	Winter Park, Orange County	2.1	2.8	1.5
8-hour 2 <sup>nd</sup> max	Winter Park, Orange County	2.0	2.5	1.5
<b>Nitrogen Dioxide (NO<sub>2</sub>)</b> – ppm; EPA Standards: Annual Mean=0.053ppm				
Annual Mean	Winter Park, Orange County	0.144	0.062	0.065
<b>Ozone (O<sub>3</sub>)</b> – ppm; EPA Standards: 1-hour=0.012ppm 8-hour=0.08ppm				
1-hour 1 <sup>st</sup> max	Cocoa Beach, Brevard County	0.099	0.09	0.09
	Melbourne, Brevard County	0.102	0.089	0.096
	Winter Park, Orange County	0.1	0.106	0.095
1-hour 2 <sup>nd</sup> max	Cocoa Beach, Brevard County	0.086	0.085	0.088
	Melbourne, Brevard County	0.094	0.086	0.09
	Winter Park, Orange County	0.093	0.1	0.091
<b>Particulate Matter (PM<sub>10</sub>)</b> – µg/m <sup>3</sup> ; EPA Standards: Annual Mean=50µg/m <sup>3</sup>				
Annual Mean	Titusville, Brevard County	19	17	19
	Winter Park, Orange County	20	17	18
<b>Sulfur Dioxide (SO<sub>2</sub>)</b> – ppm; EPA Standards: 3-hour=0.5ppm 24-hour=0.14ppm Annual Mean=0.030ppm				
3-hour 1 <sup>st</sup> max	Winter Park, Orange County	0.032	0.013	0.012
3-hour 2 <sup>nd</sup> max	Winter Park, Orange County	0.027	0.011	0.011
24-hour 1 <sup>st</sup> max	Winter Park, Orange County	0.014	0.005	0.006
24-hour 2 <sup>nd</sup> max	Winter Park, Orange County	0.008	0.005	0.004
Annual Mean	Winter Park, Orange County	0.002	0.001	0.001

pa.gov/air/data/geosel.html (1July 2004).

ppm parts per million

PM<sub>10</sub>: particulate matter equal to or less than 10 microns in diameter

µg/m<sup>3</sup>: micrograms per cubic meter

Table 3.2. CCAFS and Brevard County emissions (tons/year) (U.S. Air Force 2002).

	VOC	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>
CCAFS 2000 Air Emissions Inventory Report <sup>a</sup> (stationary sources only)	114.57	41.01	584.44	1.58	78.32
1998 Brevard County Point Source Emissions <sup>b</sup>	610	8,067	1,648	25,320	1,842
1998 Brevard County Area Source Emissions <sup>c</sup>	31,918	18,706	198,814	2,275	21,002
1998 Brevard County Total Emissions	32,528	26,773	200,462	27,595	22,844

a. Source: U.S. Air Force 45th Space Wing Environmental Flight (45th CES/CEV), 2000.

b. Source: FDEP database Air Resources Management Systems, personal communication.

c. Source: U.S. EPA database National Emission Trends, personal communication.

VOC: volatile organic compounds

NO<sub>x</sub>: nitrogen oxides

CO carbon monoxide

SO<sub>2</sub>: sulfur dioxide

PM<sub>10</sub>: particulate matter equal to or less than 10 microns in diameter

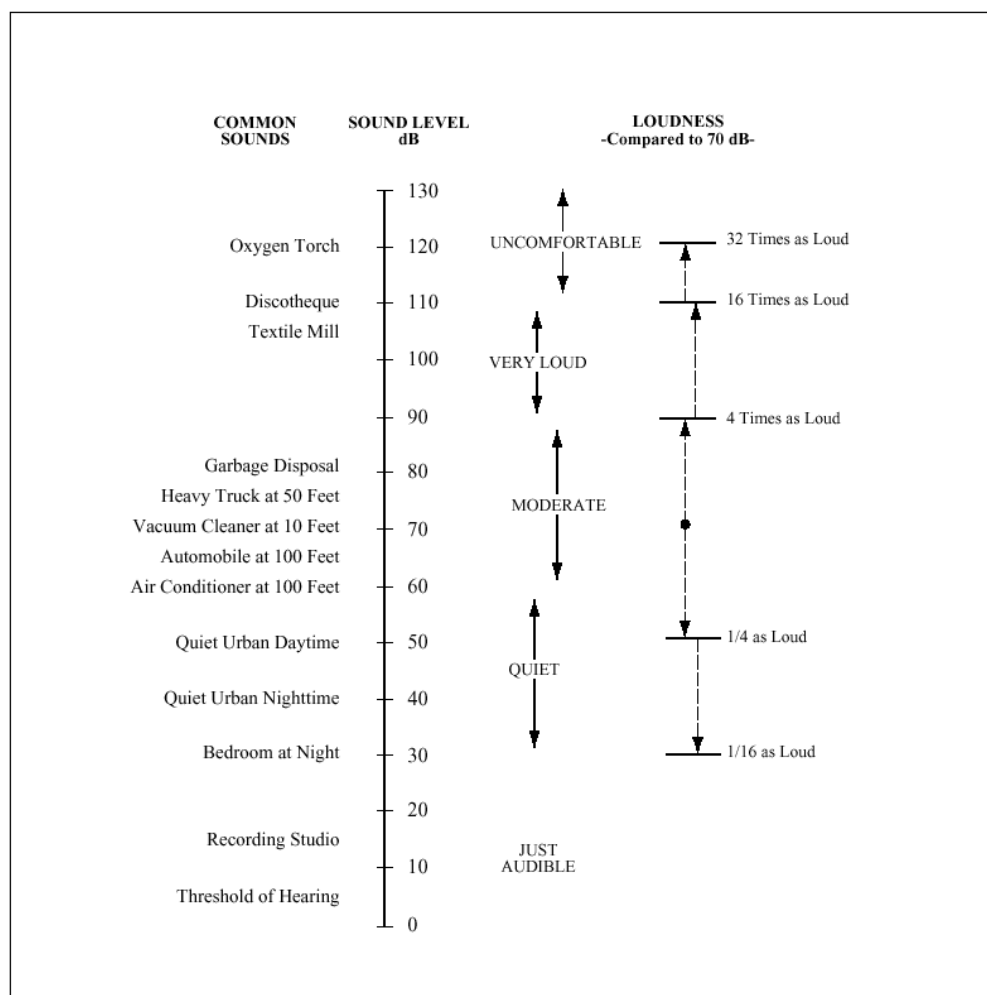


Figure 3.2. Typical A-weighted sound levels.

The relative isolation of CCAFS reduces the potential for noise to affect adjacent communities. The closest residential areas to CCAFS are to the south, in the cities of Cape Canaveral and Cocoa Beach. Expected sound levels in these areas are normally low, with higher levels occurring in industrial areas (Port Canaveral) and along transportation corridors. Residential areas and resorts along the beach would be expected to have low overall noise levels, normally about 45 to 55 dBA. Infrequent aircraft flyovers from Patrick Air Force Base and rocket launches from CCAFS would be expected to increase noise levels for short periods of time.

Noise levels at KSC probably approximate those of any urban industrial area, reaching levels of 60 to 80 dBA. The launch of space vehicles from KSC does generate intense, but relatively short-duration, noise levels of low frequencies. The highest recorded levels are those associated with the space shuttle, which in the launch vicinity (on the pad and its supporting facilities) can exceed 160 dBA. Noise levels at Port Canaveral would be expected to be typical of those at an industrial facility, reaching levels of 60 to 80 dBA.

An additional source of noise in the area is the CCAFS Skid Strip. Because of the infrequent use of the Skid Strip, noise generally does not affect public areas. Other less frequent but more intense sources of noise in the region are space launches from CCAFS

and explosive ordnance detonations conducted by the Army and Air Force on CCAFS at a frequency of approximately 55 detonations per year, ranging from 2 to 10 pounds.

### 3.6 Socioeconomics

In the 1950s, several agencies began launching rockets from Cape Canaveral. The only other local activities of significance were fishing and citrus farming. At its peak during the Apollo era in 1968, the space industry employed nearly 30 percent of Brevard County's work force. This gave Brevard County a legacy that labels this region the "Space Coast." While the Brevard economy has diversified, the space program still accounts for roughly 8 percent of local employment.

Statewide, the space industry employs 43,000 workers with 27,000 employees working directly on CCAFS and at KSC. The presence of these employees causes a chain of economic reactions throughout the local region and nearby counties. It is estimated that each job created within the space industry generates two additional jobs within the region. Post World War missile testing at CCAFS; the NASA manned space program; and various military, government, and commercial space launch activities (in combination with nearby Patrick Air Force Base) stimulated economic growth in this region. This dominant economic force generates well over \$4 billion in the Florida economy annually (Enterprise Florida).

CCAFS employees contribute to the local economy through salaries, payroll taxes, and spending. According to the Cape Commander's web site, approximately 10,000 people are badged to work on the Cape with an average annual salary of approximately \$43,000 (Enterprise Florida), for a total economic result of \$430 million dollars. It is estimated that for every dollar spent in the local community, it is re-spent between 4 to 8 times before it eventually drops out of the system due to taxes, savings, or being spent out of the local area.

### 3.7 Land Use

Land use is concerned with the various land use categories, coastal zone management, recreation, and aesthetics.

#### 3.7.1 Land Use Categories

CCAFS encompasses approximately 15,804 acres, representing approximately two percent of the total land area of Brevard County. Land use categories give a description of the existing or planned general use of the land on the installation.

Because of its technical characteristics, CCAFS lacks the commerce, community, housing, and recreational amenities that are found on most U.S. Air Force installations. There are no public beaches located on CCAFS. The land use categories and a brief description of each are listed below.

**Water.** Water includes ponds, lakes, shorefront, rivers, ocean, canals, wetlands, streams, creeks, and lands that have a high potential for water resources protection, such as aquifer recharge areas, endangered species habitats, transportation, resource protection, and recreation.

**Conservation.** Conservation includes such uses as nature preserves, wildlife management areas, and forests for passive recreation or similar uses.

**Open Space.** Open space includes level lands that are primarily cleared of natural vegetation and located in or immediately adjacent to activity nodes where future expansion may be expected to occur.

**Parks and Recreation.** Parks and recreation include land dedicated to active or passive recreational uses such as trails, pocket parks, bicycle paths, gymnasiums, and athletic fields. Parks and recreation areas are designated on the Future Land Use Map to reflect developed or planned sites that provide the workforce with an opportunity to partake in a variety of recreational activities that may be active, passive, or special in nature in a safe and convenient manner that it is compatible with their surroundings.

**Administration.** Administration is land dedicated to non-industrial uses including office, technical support service centers, personnel services, and other office type uses and associated facilities, organized into general categories of intensities. Administration uses may be located as a single use in one building or grouped together.

**Institutional.** Institutional uses include certain entities that serve the greater installation, including automotive service stations, educational facilities, training facilities and sites, medical clinics, security, fire and rescue, and emergency medical services. Institutional uses are permitted in all future land use categories provided that such uses are consistent with the General Plan, as amended.

**Research and Development.** Research and development include scientific research and testing facilities, life sciences laboratories, and other similar uses. Additionally, all development within the research and development designated lands must be compatible with industrial use.

**Utilities and Transportation.** Utilities and transportation include such uses as major transportation routes, power generation substations, railroad facilities, radio/cell towers, telephone switching stations, relay stations, radar and other tracking stations, weather stations, communications, camera pads, waste water treatment facilities, solid waste transfer stations.

**Launch and Range Support.** Launch and range support include such uses as processing, tracking, and recovery of returning support vehicles, spacecraft, and payloads.

**Aircraft Operations and Maintenance.** Aircraft operations and maintenance include such uses as maintenance, repair and storage, fuel storage and distribution, and machine shops dedicated to aircraft operations and maintenance.

**Airfield.** Airfield includes such uses as airfield/skid strip and flight apron.

**Launch.** Launch includes such uses as launch pads and associated structures for the purpose launching spacecraft, payloads, and supporting vehicles.

**Industrial.** Industrial includes land dedicated to manufacturing facilities, processing plants, factories, warehousing and maintenance trade facilities, or other similar uses, or organized into general categories of intensity.

**Seaport.** Seaport includes such uses as ship maintenance, warehousing, ship repair, ship docking. Uses allowed in the seaport category are water dependent or in direct support of a waterfront activity.

Approximately 65.2 percent of CCAFS land is categorized as “open space” or “water.” The percentage would not be nearly as high if all land that provides setbacks or security and safety buffers were identified as having the same land use category as the facilities the land supports. Actual land available for development is much less than the 9,988 acres listed as “open space.”

### 3.7.2 Coastal Zone Management

Federal activity in, or affecting, a coastal zone requires preparation of a Coastal Zone Consistency Determination, in accordance with the federal Coastal Zone Management Act of 1972, as amended (P.L. 92-583) and implemented by the National Oceanic and Atmospheric Administration. This act was passed to preserve, protect, develop and, where possible, restore or enhance the nation’s natural coastal zone resources, including wetlands, floodplains, estuaries, beaches, dunes, barrier islands, coral reefs, and fish and wildlife and their habitat.

The act also requires the management of coastal development to minimize the loss of life and property caused by improper development in a coastal zone. Responsibility for administering the Coastal Zone Management Program has been delegated to states that have developed state-specific guidelines and requirements. A federal agency must ensure that activities within the coastal zone are consistent with that state’s coastal zone management program.

The Florida Coastal Management Program, formed by the Florida Coastal Management Act, applies to activities occurring in or affecting the coastal zone in Brevard County. The entire state of Florida is defined as being within the coastal zone. For planning purposes, a “no development” zone has been established. In Brevard County, the no development zone extends from the mean high water level inland 75 feet. CCAFS has additional construction siting and facility design standards that require that facilities be set back at least 150 feet from the coast. The Florida Department of Community Affairs is the lead coastal management agency in the state. The U.S. Air Force is responsible for making the final coastal zone consistency determinations for its activities within the state, and the Florida Department of Community Affairs reviews coastal zone consistency determinations.

### 3.7.3 Recreation

Recreational activities near CCAFS center mainly around the coastal beaches and large expanses of inland waters in the Indian, Banana, and St. John’s rivers and large fresh-water lakes. Boating, surfing, water skiing, and fishing are common activities. Brevard County provides several parks within the area surrounding the station. Jetty Park is situated immediately south of Port Canaveral on the beach and is the only park in the area that allows overnight camping. Public parks in the region are not affected by launch ac-

tivities from CCAFS. The beaches along CCAFS are used for launch operations and are therefore restricted from public use. Recreational fishing is allowed only for badged personnel on the southern side of Space Launch Complex 34, at the Trident Basin and the Poseidon Wharf.

### 3.7.4 Aesthetics

The ROI for aesthetics at CCAFS includes the general visual environment surrounding the station and areas of the station visible from off-station areas. The barrier island on which it is located characterizes the visual environment in the vicinity of CCAFS. The Indian and Banana rivers separate the barrier island from the mainland. As noted earlier, the topography of the island is generally flat, with elevations ranging from sea level to approximately 20 feet above sea level. The landscape is dominated by Florida coastal strand, coastal scrub, and coastal dune vegetation. The most visually significant aspect of the natural environment is the gentle coastline and flat island terrain. The area has a low visual sensitivity because the flatness of the area limits any prominent vistas.

CCAFS is relatively undeveloped. The most significant man-made features are the launch complexes and various support facilities. These developed areas are surrounded by disturbed grasses, oak hammocks, and scrub vegetation. Most of CCAFS outside of the developed areas is covered with native vegetation. Since public access to the station is prohibited, viewpoints are primarily limited to marine traffic on the east and west and distant off-site beach areas, and small communities to the south. Approximately 15 miles of the Atlantic coastline on the east and approximately 12 miles of shoreline on the west border the installation.

However, marine traffic is limited and public observation of the coastline is infrequent. Marine traffic consists mainly of transportation and fishing vessels, pleasure boats, and cruise ships. From the south, launch complexes can be viewed from various beach areas and small communities including Port Canaveral and the cities of Cape Canaveral and Cocoa Beach. Additionally, from KSC (north and west of the station), views of the launch complexes are available to a limited population.

## 3.8 Utilities

The utilities section includes a discussion of the water system, solid waste removal, and the electrical system.

### 3.8.1 Water

Because large sections of the CCAFS water system were installed before the establishment of the Clean Water Act and the Safe Drinking Water Act, the water quality does not meet these newer standards. As noted earlier, to ensure “clear, potable water safe for human consumption,” the 45 SW has contracted with the City of Cocoa to provide the capacity of 5 millions of gallons a day to CCAFS and KSC from the Claude H. Dyal Water Treatment Plant, located 15 miles west of Cocoa along State Road 520 near an artesian well field in Orange County. For further discussion, see section 3.3.5 of this document.

### **3.8.2 Solid Wastes**

The Joint Base Operating Support Contract contractor operates two permitted landfill facilities, one for the Air Force on CCAFS and one for NASA at KSC. The Air Force landfill, located on CCAFS just north of the Skid Strip, is permitted as both a construction and demolition debris landfill and as an asbestos monofill.

The second permitted facility is a Class III landfill located on KSC. The KSC landfill is permitted to accept construction and demolition debris plus other approved non-hazardous, non-leachable solid waste. Based on waste control and cost concerns, NASA and the Joint Base Operating Support Contract contractor have entered into a contract that diverts all KSC general trash to the Brevard County landfill.

### **3.8.3 Electricity**

Florida Power and Light provides power and lighting transmission systems for both CCAFS and KSC. The Air Force owns the distribution system. Together CCAFS and KSC have a total capacity of 216,000 kilovoltampere, with CCAFS having 95,000 kilovoltampere of this total capacity. Primary service is provided using 115-kilovolt transmission lines owned and maintained by Florida Power and Light. Patrick Air Force Base negotiates power supplied by Florida Power and Light for itself, CCAFS, and KSC. KSC then reimburses the Air Force for the power used.

There are approximately 360 miles of primary and secondary distribution lines, 170 miles overhead and 190 miles underground. Overhead-to-underground transition occurs primarily at roadway crossings. The CCAFS electrical distribution system is connected to the KSC electrical distribution system by underground and aboveground distribution lines crossing the Banana River Causeway.

KSC has two main switching stations: the C-5 substation located in the Space Launch Complex 39 area and the Orsino substation located in the Industrial Area. Power distribution systems within KSC originate from either of these two main substations. The substations are conventional, outdoor, open-steel, exposed-bus facilities and feed a primary distribution system consisting of a combination of underground cables, overhead open-wire power lines, and aerial cables (SGS Design Engineering).

## **3.9 Traffic and Transportation**

The majority of the employees and other related support services providers for CCAFS reside within the unincorporated areas of Brevard County and in the cities of Cape Canaveral, Cocoa, Cocoa Beach, Rockledge, and Titusville which are all within 30 miles of the installation. The key local roads providing access to CCAFS from KSC and the local communities include state roads A1A, 520, 528, 401, 3, and 405. The NASA Causeway and Beach Road connect KSC and CCAFS.

The major on-site roadway on CCAFS is Samuel C. Philips Parkway, a 4-lane divided highway that accommodates most of the north-south traffic. At its intersection with Skid Strip Road, Samuel C. Philips Parkway becomes a one-way northbound arterial, with Hangar Road serving as the southbound arterial. To the north and south of CCAFS, Samuel C. Philips Parkway becomes State Road 401.

### 3.10 Hazardous Materials and Waste Management

In this section hazardous materials management, hazardous wastes management, pollution control, and the Installation Restoration Program are discussed.

#### 3.10.1 Hazardous Materials Management

Hazardous materials are those substances defined as hazardous by the Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. Sections 9601-9675), the Toxic Substances Control Act (15 U.S.C. Sections 2601-2671), and the Hazardous Materials Transportation Act (49 U.S.C. Section 1801, Parts 172-173). In general, hazardous materials include substances that, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may present substantial danger to public health or welfare, or to the environment, when released. AFI 32-7086, *Hazardous Materials Management*, and FED-STD-313D, *Material Safety Data, Transportation Data and Disposal Data for Hazardous Materials Furnished to Government*, establish procedures and standards that govern management of hazardous materials on Air Force installations.

CCAFS uses a variety of hazardous materials during daily operations. Numerous types of hazardous materials are used to support the various missions and general maintenance operations at CCAFS. These materials range from common building paints to industrial solvents and hazardous fuels and propellants. Management of hazardous materials, excluding hazardous fuels, is the responsibility of each individual or organization.

#### 3.10.2 Hazardous Wastes Management

Hazardous wastes are also produced by CCAFS. The collection, management, transportation, and disposition of these hazardous wastes are defined and strictly regulated by the Resource Conservation and Recovery Act [42 U.S.C. subsection 6901] and the Federal Hazardous and Solid Waste Amendments of 1984, as amended, and by applicable federal and state regulations. AFI 32-7042, *Solid and Hazardous Waste Compliance*, defines the Air Force's hazardous waste program requirements. O-Plan 19-14, *Waste Petroleum Products and Hazardous Waste Management Plan*, establishes the specific procedures and requirements for the management of hazardous waste at CCAFS. The Florida Department of Environmental Protection (FDEP) issues the necessary permits for hazardous waste facilities. The Air Force operates a Permitted Hazardous Waste Storage Facility at CCAFS in accordance with the current FDEP permit.

Each organization generating hazardous wastes bears responsibility for minimizing, identifying, packaging, labeling, preparing internal manifest, and complying with applicable state and federal regulations. This responsibility is in force until the disposition of the wastes. The Treatment, Storage and Disposal Facility (TSDF) permit lists the specific hazardous waste streams that are allowed to be stored within the facility. Since only hazardous wastes defined in the permit are allowed in the facility, it is imperative that new wastes be identified and forecast as early as possible to ensure that the Air Force can provide adequate storage and disposal of the wastes.

#### 3.10.3 Pollution Prevention

The federal Pollution Prevention Act of 1990 established pollution prevention as a na-

tional objective. It is DoD acquisition policy to eliminate and reduce the use of hazardous materials during a system's acquisition (DoD 5000.2-R, *Mandatory Procedures for Major Defense Acquisition Programs and Major Automated Information System Acquisition Programs*, Sections 4.3.7.4 and 4.3.7.5). Air Force Policy Directive 32-70, *Environmental Quality*, outlines the Air Force policy for pollution prevention and references AFI 32-7080, *Pollution Prevention Program*, which defines the Air Force's pollution prevention program requirements. AFI 32-7080 instructs all Air Force installations to implement a hierarchy of actions into daily operations to reduce the use of hazardous materials and the release of pollutants into the environment. The hierarchy of actions to prevent pollution is as follows: source reduction, waste reuse, waste recycling and, as a final option, waste disposal.

### 3.10.4 Installation Restoration Program

The Installation Restoration Program is an Air Force program that identifies, characterizes, and remediates past environmental contamination on Air Force installations. The program has established a process to evaluate past disposal sites, control the migration of contaminants, and control potential hazards to human health and the environment. In response to the Comprehensive Environmental Response, Compensation, and Liability Act and Section 211 of the Superfund Amendments and Reauthorization Act requirements, the DoD established the Defense Environmental Restoration Program to facilitate clean up of past hazardous waste disposal and spill sites nationwide.

Section 105 of the Superfund Amendments and Reauthorization Act mandates that response actions follow the National Oil and Hazardous Substances Pollution Contingency Plan, as promulgated by the U.S. Environmental Protection Agency. AFI 32-7020, *The Environmental Restoration Program*, implements the Defense Environmental Restoration Program as outlined in DoD Manual 5000.52-M, *Environmental Restoration Program Manual*.

Both the proposed action and the secondary alternative site have been classified as requiring "No Further Action" with regard to any Installation Restoration Program issues.

### 3.11 Cultural Resources

Cultural resources include prehistoric and historic sites, structures, districts, artifacts, or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or any other reasons. Numerous laws and regulations require that possible effects to cultural resources be considered during the planning and execution of federal undertakings.

These laws and regulations stipulate a process of compliance, define the responsibilities of the federal agency proposing the action, and prescribe the relationship among other involved agencies such as the State Historic Preservation Officer and the Advisory Council on Historic Preservation.

In addition to NEPA, the primary laws that pertain to the treatment of cultural resources during environmental analysis are the National Historic Preservation Act (especially Sections 106 and 110), the Archaeological Resources Protection Act, the American Indian Religious Freedom Act, and the Native American Graves Protection and Repatriation Act. Only those cultural resources determined to be potentially significant under the

above-cited legislation are subject to protection from adverse impacts resulting from an undertaking.

To be considered significant, a cultural resource must meet one or more of the criteria established by the National Park Service that would make that resource eligible for inclusion in the National Register of Historic Places [National Register]. The term "eligible for inclusion in the National Register" includes all properties that meet the National Register listing criteria, which are specified in the Department of the Interior regulations 36 CFR 60.4 and National Register Bulletin 15. Therefore, sites not yet evaluated may be considered potentially eligible for inclusion in the National Register and, as such, are afforded the same regulatory consideration as nominated properties. Whether prehistoric, historic, or traditional, significant cultural resources are referred to as "historic properties."

Numerous archaeological surveys have been conducted at CCAFS (Bense and Philips, 1990; Cantley et. al., 1994; Le Baron, 1884; Levy et. al., 1984; Long, 1967; Moore, 1922; Rouse, 1951; Stirling, 1935; U.S. Army Corps of Engineers, 1988, 1989, 1990, 1991; and Wiley, 1954). In 1992, the U.S. Army Corps of Engineers synthesized data from several of these studies and developed a cultural resources sensitivity map for CCAFS (New South Associates, 1996). Fifty-six prehistoric and historic archaeological sites have been recorded; 19 of these sites have been identified as potentially eligible for listing in the National Register.

The nearest cultural resource sites to the proposed action and secondary alternative site include the archaeological site known as the Quarterman Site (8BR223) and the historic site known as the original Mission Control Center (8BR216) (pers. comm. D. George 45 CES/CEV Cultural Resources). The Quarterman Site contains both prehistoric and historic components and is named for the family that resided there from 1881 to 1950. The original Mission Control Center was used for all Mercury flights and the first three Gemini flights. In 1984, the building was listed as a national Historic Landmark as part of a discontinuous district at Cape Canaveral (45<sup>th</sup> Space Wing 2001b). The Mission Control Center site, the closer of the two sites, is approximately a half-mile away from site of the proposed action.

### 3.12 Invasive Plant Species

Invasive species that colonize an area may gain an ecological edge over indigenous species since the insects, diseases, and foraging animals that naturally keep its growth in check in its native range are generally not present in its new habitat. Once established, these plant species easily out-compete and displace native plant species, disrupt ecological processes, and significantly degrade entire plant communities. Native plants can be threatened by hybridization with invasives. Endangered species may be extirpated from their habitats by invasive plant species.

Consequently, specific management of invasive species is required to preserve the natural state of the environment for flora and fauna of an area. Executive Order 13112, *Invasive Species*, the Sikes Act, as amended (16 U.S.C. 670, February 3, 1999), and other Federal and State regulations and policies require control of invasive species to reduce their ecological impact.

Neither the proposed action nor secondary alternative sites contain exotic species of grass that would have to be eradicated.

### 3.13 Environmental Justice

On February 11, 1994, Executive Order 12898, *Environmental Justice*, was issued. A Presidential Transmittal Memorandum accompanying this Executive Order states that “Each Federal agency shall analyze the environmental effects, including human health, economic, and social effects, of Federal actions, including effects on minority communities and low-income communities, when such analysis is required by the NEPA 42 U.S.C. Section 4321, et seq.” Under 32 CFR Part 989.33, environmental justice analyses, as specified in the Executive Order, are to be included in U.S. Air Force NEPA documents.

The 2000 Census of Population and Housing reports numbers of both minority and property residents. Minority populations included in the census are identified as Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and Other Pacific Islander, Hispanic or Latino, and Other. Poverty status is reported as the number of families with income below the federal poverty level. The federal poverty level in 1999 for a family of four in the lower 48 states was \$17,029.

Most environmental impacts resulting from the proposed action at CCAFS would be expected to occur within Brevard County, Florida. Based on the 2000 Census of Population and Housing, Brevard County had a population of 476,230 persons. Of this total, 77,625 persons, or 16.3 percent, were minority, and 45,242 persons, or 9.5 percent, were below the poverty level.

## **4.0 Environmental Consequences Associated with the Proposed Activities**

This chapter presents the results of the analysis of potential environmental consequences associated with the proposed project activities. Each section within this chapter discusses a separate resource area and describes the potential impacts resulting from implementation of the proposed action (the construction of a satellite alert facility off Flight Control road), the secondary alternative (the construction of a satellite alert facility off Flight Control road), and no-action alternative (no construction of a satellite alert facility). Mitigation measures are described where applicable.

### **4.1 Earth Resources**

Activities associated with the proposed action and the secondary alternative sites off Flight Control road would require construction of new facilities at a site that has been disturbed in the past.

This type of construction would alter the topography of the site beyond changes that result from natural erosion or deposition. Appropriate measures to reduce wind and water erosion would be implemented. Grading and construction procedures would be designed to minimize topographic changes. The design would include balancing the amount of cut and fill to maximize the use of local material, where possible. Additional measures for erosion control may include permanent seeding, mulching, sod stabilization, and vegetative buffer strips. Sediment and erosion controls can also include engineered structures to divert or store flow, or limit runoff.

The Environmental Resources Permit and Storm Water Pollution Prevention Plan would include specific measures that would be implemented to control both wind and water erosion of soils before and during construction activities. Sediment and erosion controls generally address pollutants in storm water generated from the site during construction. Storm water management measures are generally implemented before and during construction and primarily result in reductions of pollutants in storm water. Additional measures include best management practices.

Short-term adverse impacts to soils may result, but long-term impacts would not be significant. Standard construction practices and adherence to permit requirements would minimize adverse impacts to geology and soils.

Under the no-action alternative, the proposed satellite alert facility would not be constructed. Thus, no impacts to earth resources would result from construction activities.

### **4.2 Biological Resources**

Federal agencies are required by Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et. seq.), to assess the effect of any project on federally listed threatened or endangered species. Under Section 7, consultation with the USFWS and the National Oceanographic and Atmospheric Agency Fisheries Service is required for federal projects if such actions could directly or indirectly affect listed species or destroy or adversely modify critical habitat. It is also Air Force policy to consider listed and special status species recognized by state agencies when evaluating the impacts of a project.

### **4.2.1 Vegetation**

Impacts to vegetation would not be a concern since the proposed and alternative sites consist of mowed grass only. The nearest natural area, which consists of oak scrub, is located approximately 200 feet away. No sensitive or special status plant species are known to occur at either the proposed action or secondary alternative site. As stated earlier, the project area is already under strict control burn regulations and this action would not affect anything applicable to the controlled burn process.

### **4.2.2 Wildlife**

Construction activities associated with the proposed action and the secondary alternative would occur over several months and would include the breeding season for many wildlife species, including ground nesting birds. As a result, construction activities would result in short-term noise disturbances, which may temporarily disrupt foraging and roosting activities of individual birds such as killdeer that are primarily known for ground nesting.

If the construction occurs during the breeding season for avian species, it has the potential to disrupt breeding activities including courtship, incubation and brooding. These impacts would be considered short-term and would not be considered of a magnitude to result in adverse impacts to populations within the vicinity of the proposed action or the secondary alternative. A survey would be completed prior to construction to ensure no birds are nesting in the area.

Potential noise related impacts to mammalian species during construction activities would include disruption of normal activities due to noise and ground disturbances. These impacts would be considered short-term and would not be considered of a magnitude to result in adverse impacts to populations within the vicinity of the proposed action or the secondary alternative.

The only T&E species with the potential to be impacted by this action are the sea turtles that nest on the CCAFS beach. The new facility would be constructed in accordance with 45 SWI 32-7001 and the Air Force would develop a LMP, which would be forwarded to the USFWS for approval.

A Section 7 consultation with the USFWS was completed to address potential impacts to T&E species, including the southeastern beach mouse (*Peromyscus polionotus niveiventris*), Florida scrub-jay (*Aphelocoma coerelescens*), eastern indigo (*Drymarchon co-rais couperi*), loggerhead turtle, green turtle and leatherback turtle, as well as migratory birds. The USFWS determined that the listed species would not be negatively impacted by construction or operation of the proposed facility (See Appendix E). Additionally, in reference to the Migratory Bird Treat Act, the USFWS reviewed the proposed action for impacts to migratory birds and did not object to the project (See Appendix E).

Under the no-action alternative, no mitigation measures are required for avian and animal species since the satellite alert facility would not be built. There would be no need for a LMP.

### 4.3 Water Resources

For both the proposed action and the secondary alternative site, there are no surface bodies of water within the ROI. Groundwater is not used as a source of potable drinking water. The water quality is considered poor due to elevated levels of total dissolved solids, which exceed secondary drinking water regulations; high levels of chlorides and sulfates; and the presence of volatile chlorinated solvents. Furthermore, the surficial aquifer is not capable of producing large volumes of water. Neither the proposed action nor the secondary alternative is expected to adversely impact groundwater quality or alter the hydrogeologic characteristics of the surficial aquifer. Under the no-action alternative, the proposed satellite alert facility would not be constructed. Thus, no impacts to water resources would result.

For both the proposed action and the secondary alternative sites, certain regulatory requirements are necessary with regard to water. An Environmental Resources Permit through the St. Johns River Water Management District and a National Pollutant Discharge Elimination System permit through the Florida Department of Environmental Protection are mandatory. Under the no-action alternative, the proposed satellite alert facility would not be constructed. Thus, no regulatory water requirements would be necessary.

### 4.4 Air Quality

Both the proposed action and the secondary alternative could result in short-term adverse impacts to the air quality within the immediate area of construction activities. Construction-related adverse impacts could result from construction equipment (exhaust emissions) and construction activities (fugitive dust emissions) over the construction period.

Emissions generated by construction activities would be in the form of either gaseous or particulate pollutant emissions. Gaseous emissions would occur from heavy-duty construction equipment and vehicle travel to and from the site by construction workers. Particulate matter in the form of dust emissions would also be generated during the construction phase from excavation, earth moving, construction of buildings, and traffic on unpaved surface areas.

The scope of construction and resulting air emissions is not expected to be of a magnitude that would result in significant adverse impacts. CCAFS is located in an area that is in attainment for all criteria air pollutants; therefore, a conformity determination is not required.

Although no impacts have been identified, implementing standard procedures, such as vigorous water application during ground-disturbing activities, could reduce emissions. Decreasing the time period during which newly graded sites are exposed to the elements, coupled with the use of windbreaks, could further minimize airborne dust concentrations.

Efficient scheduling of equipment use, implementation of a phased construction schedule to reduce the number of units operating simultaneously, and performance of regular vehicle engine maintenance could reduce combustive emission and air quality effects from construction activities by 10 to 25 percent. Selecting coatings with low volatile organic compounds content could reduce emissions from architectural coatings.

Under the no-action alternative, the proposed satellite alert facility would not be constructed. Thus, no impacts to air quality would result from construction activities.

## 4.5 Noise

The construction associated with the proposed action would temporarily increase the ambient noise levels in the project areas. All areas affected are along roadways, and there would likely be sensitive receptors in the vicinity of the construction. However, based on the magnitude of the construction activities and estimated noise levels that would be generated (Table 4.1), the maximum noise level exposures established by the Occupational Safety and Health Administration, and the anticipated exposure time to the construction noise, it is anticipated that no adverse impacts would result.

Table 4.1.  $L_{eq1h}$  noise levels as a result of construction activities.

Distance from Construction area (feet)	Structural Work (dB)	Concrete Work (dB)	Road Construction (dB)
50	89.1	89.6	80.6
100	84.6	85.1	76.1
300	77.4	77.9	69.0
500	74.1	74.6	65.6

$L_{eq1h}$  – the one-hour average sound level

Under the no-action alternative, the satellite alert facility would not be constructed. Thus, no noise related impacts would occur.

## 4.6 Socioeconomics

Since the magnitude of this project is small, it is anticipated that all work would be accomplished by already employed personnel working in the local or nearby areas. Therefore, no adverse impacts to the local population and employment are expected to result from implementation of the proposed action, the secondary alternative, or the no-action alternative.

## 4.7 Land Use

The proposed action and the secondary alternative site would occur within the boundary of CCAFS. The proposed action would not result in the conversion of prime agricultural land or cause a decrease in the use of land. Moreover, the proposed site would use land that is already cleared. Neither the proposed action nor the secondary alternative is expected to adversely affect recreation or aesthetics.

Neither the proposed action nor the secondary alternative lies within the Florida Coastal

Management Act no-development zone. Therefore, construction of either facility is consistent with the Act. In addition, the contractor would coordinate with 45 SW Civil Engineering before the design of facilities to ensure adherence to all siting standards.

Under the no-action alternative, the proposed satellite alert facility would not be constructed. Thus, no impacts to land use would occur.

### 4.8 Utilities

During construction of both the proposed action and the secondary alternative, average daily water consumption on CCAFS would increase slightly. However, no adverse impacts are anticipated during construction. Wastewater generation would also increase during the construction period; however, the expected increase can be absorbed by the existing system, and no adverse impacts are anticipated.

Solid waste generated over the duration of the construction of either the proposed action or the secondary alternative would include packaging from materials (cardboard and plastic), scrap rebar, and miscellaneous waste generated by onsite construction workers. The contractor would be responsible for the disposal and/or recycling of all waste generated during the scope of the project. Miscellaneous unrecyclable wastes generated during construction will be disposed of off base by the contractor. Soils removed from the project site would be transported to a designated site. Falsework used during the project would be reused or recycled by the contractor. Therefore, neither the proposed action nor the secondary alternative would have adverse impacts on solid waste management at CCAFS.

Increases in electrical consumption during construction are expected to be minimal. Therefore, no adverse impacts to electrical consumption are expected.

Under the no-action alternative, the proposed satellite alert facility would not be constructed. Thus, no impacts to utilities would occur.

### 4.9 Traffic and Transportation

Construction traffic associated with the proposed action or the secondary alternative is not expected to adversely affect traffic within CCAFS given the small magnitude of the proposed project. Likewise, the proposed project is not expected to adversely affect Brevard County traffic and public transportation. Under the no-action alternative, the proposed satellite alert facility would not be constructed. Thus, no impacts to traffic and transportation would occur.

### 4.10 Hazardous Materials and Waste Management

For both the proposed action and the secondary alternative, the potential for adverse impacts to the natural environment exists for the reasons outlined below. Hazardous materials, primarily in the form of petroleum, oil, and lubricants, would be used for operating the construction equipment. The potential exists for unexpected releases of petroleum, oil, and lubricants used for the equipment, resulting in the generation of hazardous waste. The 45 SW Full Spectrum Response Plan (FSTR) 10-2, Volume II, *Hazardous Material (HAZMAT) Emergency Planning and Response*, dated March 20005, establishes roles and responsibilities, outlines regulatory guidelines, directs specific activities of

personnel responding to an incident and assists in planning the prevention of accidental releases. The construction contractor is responsible for implementing these procedures, as appropriate.

Hazardous waste and other regulated waste (i.e. used oil) may be generated during construction activities. These wastes shall be managed on site in accordance with O-Plan 19-14 to prevent potential adverse impacts to the environment.

Pollution Prevention shall be achieved through compliance with the Pollution Prevention Management Plan along with the implementation of the recommended measures for air quality (see Section 4.4) and the hazardous waste management procedures.

Under the no-action alternative, the satellite alert facility would not be constructed. Thus, no impacts would occur as a result of hazardous materials use or hazardous waste generation.

### 4.11 Invasive Species Management

Land clearing on CCAFS requires the removal of exotic plant species. Invasive species management is mandated also. Federal, State, and the 45 CES/CEV policies require that all invasive species be treated to prevent regrowth. Species that are of immediate concern at the Cape include, but not exclusive are the, Brazilian pepper (*Schinus terebinthifolius* Raddi), Cogon grass (*Imperata cylindrical*), and Australian pine (*Casuarina equisetifolia*). The management of invasive plant species may be controlled by mechanical or chemical means or both. However, there are no exotic plant species occurring at either the proposed action site or the secondary alternative site.

### 4.12 Cultural Resources

The nearest known historical or cultural locations are over 2,000 feet away from the proposed action and the secondary alternative. No adverse impacts to cultural resources are expected from the proposed action. In the event of an accidental discovery of any archaeological resources, work would cease on the project and the 45 SW Cultural Resources Manager would be notified. There are not expected to be adverse impacts to any archeological or historical sites at either location but in the advertent discovery, the same mitigating actions would occur as those for the proposed action in the event of an accidental discovery of any archaeological resources. Under the no-action alternative, the proposed satellite alert facility would not be constructed. Thus, no impacts to cultural resources would occur.

### 4.13 Environmental Justice

The proposed action or the secondary alternative would occur within the boundaries of CCAFS. No minority or low-income populations reside within these areas. Thus the project is not expected to cause any disproportionately high or adverse impacts to low-income or minority populations. Under the no-action alternative, the satellite alert facility would not be constructed. Thus, there would be no environmental justice issues.

### 4.14 Cumulative Impacts

Cumulative effects result from the incremental effect of an action when added to other

past, present, and reasonably foreseeable future actions, regardless of what agency undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

No other actions have occurred over the past five years within the ROI of the proposed satellite alert facility that would result in a cumulative effect when considered in conjunction with the activities of the proposed action and the secondary action. Since no facility would be built under the no-action alternative, no cumulative impacts would occur.

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**APPENDIX A  
RELEVANT FEDERAL AND STATE REGULATIONS, STATUTES, AND PERMITS**

## APPENDIX A: RELEVANT FEDERAL AND STATE REGULATIONS, STATUTES AND PERMITS

Federal Law	Regulatory Agency	Activity or Requirement
Clean Air Act (CAA) of 1970 (42 U.S.C. 7401 et seq.)	U.S. Environmental Protection Agency (EPA); Florida Department of Environmental Protection (FDEP)	States that applicable state and national ambient air quality standards must be maintained during the operation of any emission source. National Ambient Air Quality Standards include primary and secondary standards for various pollutants. The primary standards are mandated by the CAA to protect public health, while the secondary standards are intended to protect the public welfare from adverse impacts of pollution, such as visibility impairment.
Clean Air Act Amendments of 1990	U.S. EPA, FDEP	Establishes new federal non-attainment classifications, new emissions control requirements, and new compliance dates for areas in non-attainment. The requirements and compliance dates are based on the non-attainment classification.
Clean Water Act (CWA) of 1977 as amended (33 U.S.C. 1251 et seq.)	U.S. EPA; FDEP; St. John's River Water Management District	Prohibits the discharge of pollutants from a point source into navigable Waters of the United States, except in compliance with a National Pollutant Discharge Elimination System permit (40 CFR Part 122). The navigable Waters of the United States are considered to encompass any body of water whose use, degradation, or destruction will affect interstate or foreign commerce.
Archaeological Resources Protection Act (ARPA) of 1979 (U.S.C. 470aa-mm), Supplemental Regulations of 1984	U.S. Department of the Interior, National Park Service	Secures protection of archaeological resources and sites on public and Indian lands; requires permitting for any excavation or collection of archaeological material from these lands; provides civil and criminal penalties for violations.
Endangered Species Act (ESA) of 1973 (7 U.S.C. 136; 16 U.S.C. 460 et seq.)	U.S. Department of the Interior, Fish and Wildlife Service (USFWS)	Conserves threatened and endangered species and the ecosystems on which those species depend. The ESA requires that federal agencies, in consultation with the USFWS and the National Oceanic and Atmospheric Administration Fisheries Service use their authorities in furtherance of its purposes by carrying out programs for the conservation of endangered or threatened species.
Section 7 of the ESA (16 U.S.C. 1536)	USFWS	Contains provisions that require federal agencies to consult with the Secretary of Interior and to take necessary actions to insure that actions authorized, funded, or carried out by them do not jeopardize the continued existence of endangered species and threatened species.
Migratory Bird Treaty Act of 1918 as amended (16 U.S.C. 703-712)	USFWS	Implements various treaties and conventions between the U.S. and Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds. Under the Act, taking, killing or possessing migratory birds is unlawful.
Coastal Zone Management Act (CZMA) of 1972 (16 U.S.C. 2452-24645).	Florida Department of Community Affairs	Plays a significant role in water quality management. Under the CZMA, a Federal action that may affect the coastal zone must be carried out in a manner that is consistent with state coastal zone management programs.
Resource Conservation and Recovery Act (RCRA) of 1976 (42 U.S.C. 6901 et seq.); Title 40 CFR 270; Chapter 403.704, 403.721, 403.8055, Florida Statutes ; Chapter 62-730.180, Florida Administrative Code	U.S. EPA; FDEP	Gives the U.S. EPA the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous wastes.
Executive Order 13112, Invasive Species	U.S. EPA	Provides federal regulatory guidelines concerning invasive species

**APPENDIX B  
LIST OF PREPARERS**

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**APPENDIX C  
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**APPENDIX D  
ACRONYMS AND ABBREVIATIONS**

45 CES/CEV	45 <sup>th</sup> Space Wing Environmental Office
45 SW	45 <sup>th</sup> Space Wing
AFI	Air Force Instruction
ARPA	Archaeological Resources Protection Act
CAA	Clean Air Act
CCAFS	Cape Canaveral Air Force Station
CFR	Code of Federal Regulations
CO	Carbon monoxide
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
dB	decibel
dBA	decibel, A-weighted
DoD	Department of Defense
EA	Environmental Assessment
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FDEP	Florida Department of Environmental Protection
KSC	John F. Kennedy Space Center
LMP	Light Management Plan
NASA	National Aeronautics and Space Administration
NEPA	National Environmental Policy Act
NO <sub>x</sub>	nitrogen oxides
PM <sub>10</sub>	particulate matter equal to or less than 10 microns in diameter
ppm	parts per million
RCRA	Resource Conservation and Recovery Act
ROI	Region of Influence
SO <sub>2</sub>	Sulfur dioxide
SWI	Space Wing Instruction
T&E	Threatened and Endangered
U.S.	United States
U.S.C.	United States Code
USFWS	U.S. Fish and Wildlife Service
µg/m <sup>3</sup>	micrograms per cubic meter

**APPENDIX E**  
**U.S. FISH AND WILDLIFE SERVICE AND FLORIDA STATE CLEARINGHOUSE CORRESPONDENCE**



DEPARTMENT OF THE AIR FORCE  
45TH SPACE WING (AFSPC)



FWS Log No. 05-1116

The proposed action is not likely to adversely affect resources Protected By the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et Seq.) This finding fulfills the requirements of the Act.

With reference to the Migratory Bird Treaty Act and National Environmental Policy Act (Sects. 1501.6 and 1503.4), the Service has reviewed the proposed action for impacts to migratory birds and does not object to the project.

MEMORANDUM FOR UNITED STATES DEPT  
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FROM: 45 CES/CEV  
1224 Jupiter Street, MS 9125  
Patrick AFB FL 32925-3343

SUBJECT: Section 7 Consultation for Satellite Alert Facility on Cape Canaveral  
Air Force Station (CCAFS), Florida

1. The 45th Space Wing has prepared an Environmental Assessment (PEA) for the construction of a Satellite Alert Facility on CCAFS. The purpose of the facility is to store satellites, particularly during hurricanes. The proposed site for the new facility is semi-improved grounds (mowed grass) within Area 59, which is a fenced in area containing several similar types of facilities; therefore, removal of vegetation will not be required.
2. The nearest habitat that supports federally threatened or endangered species is located approximately 200', outside the fence surrounding the site. This area outside the fence supports Southeastern Beach Mouse (*Peromyscus polionotus niveiventris*), Florida Scrub-jay (*Aphelocoma coerelescens*), and Eastern Indigo (*Drymarchon corais couperi*). Additionally, three species of sea turtles, Loggerhead (*Caretta caretta*), Green (*Chelonia mydas*) and Leatherback (*Dermochelys coriacea*) nest on adjacent CCAFS beaches.
3. It is the opinion of this office that none of the species listed above would be negatively impacted by construction or operation of the facility. As stated above, the site is presently mowed grass and does not support wildlife. The area in which the facility will be constructed is already under strict control burn requirements and the new facility will not result in any additional burn restrictions that don't already exist. The facility will be constructed in accordance with Space Wing Instruction 32-7001, Exterior Lighting Management, and a Light Management Plan (LMP) will be required for the facility. The LMP will be forwarded to your office for approval once it is completed.

4. Please review the attached EA in accordance with Section 7 of the Endangered Species Act and provide a response to this office at your convenience. Point of contact for this subject is Ms. Angy Chambers at 321-853-6822 or E-mail [angy.chambers@patrick.af.mil](mailto:angy.chambers@patrick.af.mil).

  
For ROBIN L. SUTHERLAND, GS-13  
Chief, Environmental Planning

Attachment:  
Environmental Assessment



Jeb Bush  
Governor

# Department of Environmental Protection

Marjory Stoneman Douglas Building  
3900 Commonwealth Boulevard  
Tallahassee, Florida 32399-3000

Colleen M. Castille  
Secretary

July 7, 2005

Ms. Angy L. Chambers  
Department of the Air Force  
45 CES/CEV  
1224 Jupiter Street, MS 9125  
Patrick AFB, FL 32925-3343

RE: Department of the Air Force – Environmental Assessment (EA) for the Proposed  
Satellite Alert Facility at Cape Canaveral Air Force Station (CCAFS) – Cape  
Canaveral, Brevard County, Florida

SAI # FL200505120880C

Dear Ms. Chambers:

The Florida State Clearinghouse, pursuant to Presidential Executive Order 12372, Gubernatorial Executive Order 95-359, the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended, and the National Environmental Policy Act, 42 U.S.C. §§ 4321, 4331-4335, 4341-4347, as amended, has coordinated a review of the above-referenced EA.

The St. Johns River Water Management District (SJRWMD) notes that the preferred site is a cleared and grassed area that is mowed and maintained regularly. Based on this description, it does not appear that wetland or other surface water impacts will occur. The proposed activities will require an Environmental Resource Permit from SJRWMD and as part of the permit application review process, CCAFS will be required to demonstrate that the project meets the state water quantity, water quality, and environmental criteria prior to permit issuance. Please contact Michelle Reiber, Supervising Regulatory Scientist, in the Palm Bay service center at (321) 676-6615 or [mreiber@sjrwmd.com](mailto:mreiber@sjrwmd.com) if there are any questions.

Based on the information contained in the referenced EA and comments provided by our reviewing agencies, the state has determined that, at this stage, the proposed project is consistent with the Florida Coastal Management Program (FCMP). The applicant must, however, address the concerns identified by the reviewing agencies as described herein and enclosed. The state's continued concurrence with the project will be based, in part, on the adequate resolution of any issues identified during this and subsequent reviews. The state's final concurrence of the

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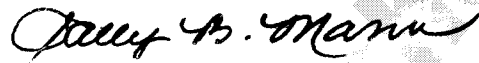
Printed on recycled paper.

Ms. Angy L. Chambers  
July 7, 2005  
Page 2 of 2

project's consistency with the FCMP will be determined during the environmental permitting stage.

Thank you for the opportunity to review this project. If you have any questions regarding this letter, please contact Ms. Suzanne Ray at (850) 245-2172.

Yours sincerely,



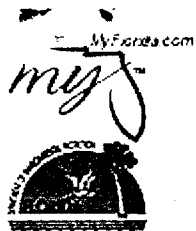
Sally B. Mann, Director  
Office of Intergovernmental Programs

SBM/ser

Enclosures

cc: Geoffrey Sample, SJRWMD

Florida State Clearinghouse



# Florida

Department of Environmental Protection

"More Protection, Less Process"



## Categories

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Project Information	
Project #	FL200505120880C
Comments Due	06/11/2005
Letter to	07/11/2005
Description	DEPARTMENT OF THE AIR FORCE - ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED SATELLITE ALERT FACILITY AT CAPE CANAVERAL AIR FORCE STATION - CAPE CANAVERAL, BREVARD COUNTY, FLORIDA.
Keywords	USAF - SATELLITE ALERT FACILITY - CAPE CANAVERAL, BREVARD CO.
CFDA #	12.200
Agency Comments	
<b>E. CENTRAL FL RPC - EAST CENTRAL FLORIDA REGIONAL PLANNING COUNCIL</b>	
The proposed project, as presented for review and when considered in its entirety, is consistent with the adopted Goals, Policies and Objectives of the East Central Florida Regional Planning Council.	
<b>BREVARD -</b>	
<b>STATE - FLORIDA DEPARTMENT OF STATE</b>	
No comment/Consistent	
<b>ENVIRONMENTAL PROTECTION - FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION</b>	
No comments.	
<b>ST. JOHNS RIVER WMD - ST. JOHNS RIVER WATER MANAGEMENT DISTRICT</b>	
The report indicates that the preferred site is a cleared and grassed area that is mowed and maintained regularly. Based on this description, it does not appear that wetland or other surface water impacts will occur. The proposed activities will require an Environmental Resource Permit from SJRWMD and as part of the permit application review process CCAFS will be required to demonstrate the project meets the water quantity, water quality, and environmental criteria prior to permit issuance. Please contact Michelle Reiber, Supervising Regulatory Scientist, in the Palm Bay service center at (321) 676-6615 or mreiber@sjrwmd.com if there are any questions.	

For more information please contact the Clearinghouse Office at:

3900 COMMONWEALTH BOULEVARD MS-47  
TALLAHASSEE, FLORIDA 32399-3000  
TELEPHONE: (850) 245-2161  
FAX: (850) 245-2190

Visit the [Clearinghouse Home Page](#) to query other projects.

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COUNTY: BREVARD  
SCH-USAF-CCAFS  
2005-05204

DATE: 5/12/2005  
COMMENTS DUE DATE: 6/11/2005  
CLEARANCE DUE DATE: 7/11/2005  
SAI#: FL200505120880C

MESSAGE:

<b>STATE AGENCIES</b>	<b>WATER MNGMNT. DISTRICTS</b>	<b>OPB POLICY UNIT</b>	<b>RPCS &amp; LOC GOVS</b>
ENVIRONMENTAL PROTECTION	ST. JOHNS RIVER WMD		
X STATE			

The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evaluation and is categorized as one of the following:

- ☐ Federal Assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.
- ☒ Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.
- ☐ Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a consistency certification for state concurrence/objection.
- ☐ Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.

**Project Description:**

DEPARTMENT OF THE AIR FORCE - ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED SATELLITE ALERT FACILITY AT CAPE CANAVERAL AIR FORCE STATION - CAPE CANAVERAL, BREVARD COUNTY, FLORIDA.

RECEIVED

JUN 13 2005

OIP / OLGA

**To: Florida State Clearinghouse**

AGENCY CONTACT AND COORDINATOR (SCH)  
3900 COMMONWEALTH BOULEVARD MS-47  
TALLAHASSEE, FLORIDA 32399-3000  
TELEPHONE: (850) 245-2161  
FAX: (850) 245-2190

**EO. 12372/NEPA Federal Consistency**

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> No Comment | <input checked="" type="checkbox"/> No Comment/Consistent |
| <input type="checkbox"/> Comment Attached      | <input type="checkbox"/> Consistent/Comments Attached     |
| <input type="checkbox"/> Not Applicable        | <input type="checkbox"/> Inconsistent/Comments Attached   |
|  | <input type="checkbox"/> Not Applicable                   |

**From:**

Division of Historical Resources  
Division/Bureau: Bureau of Historic Preservation

Reviewer: S. Edwards Lance A. Hammer, Deputy SHPO  
Date: 6-1-05 6.2.2005  
NHPA

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